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FORMULAE FOR COMANCHE STEM AND WORD FORMATION

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0. Introduction
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0. In this paper we discuss Comanche stem and word formation. The formulae utilized to represent the observed constructions grew out of an attempt to handle the cross-cleavage between stem classes and word classes. Although not all possible combinations of formational and inflectional elements have been found, this method of statement by formulae can be expanded to include any new combinations recorded.

Stem classes are characterized by their potential distribution with alternants of suffix 311, but are not identifiable by any feature of internal structure. Word classes are characterized by their potential syntactic distribution, and when inflected are identified morphologically by their final suffix (see **4**).

1. Affix check list.[2] The following list is representative of the most commonly used affixes in Comanche. Some classes of affixes are not exhaustive (e.g. derivational affixes, class 100, which includes many more morphemes), but the pertinent classes for stem and word formation are represented.

Classification of affixes by centuries is as follows: 100 derivational, 200 verbal inflectional, 300 nominal inflectional. Classification by decades is generally on the basis of relative order. However, morphemes 201, 253, 254, 323 have been classified otherwise for convenience of description since their relative order is not as pertinent as their identity with the group in which they are placed. Decimal numbers indicate mor-

[1] Data for this paper were gathered in the 1948 session of the Summer Institute of Linguistics at the University of Oklahoma. Comanche informants from Walters, Oklahoma, were Molly Weryavah, Helen Seahmer, and Emily Riddles. We are indebted to the staff of the Institute, particularly to Elliott Canonge and John B. McIntosh for technical information on Comanche, and to William L. Wonderly for advice in the presentation of the material.

[2] The phonemes of Comanche are analyzed as follows: p, t, k, kʷ, ʔ; c; ʙ, s, h; m, n, r; w, y; i, I, e, E; ɨ, Ɨ, a, A; u, U, o, O. Large caps represent voiceless vowels; small cap B represents bilabial v. Stress /'/ is written immediately preceding the stressed syllable. Hyphen (-) represents morphological juncture where clitic stems are bound to other stems or words (see **3.1.3.**, **3.1.4.**, **3.3.**).

The recurrent morphophonemic changes are as follows: (1) Single morpheme-final vowels generally become voiceless in utterance-final position. 'kahninīī *houses* > 'kahnI *house*.

(2) In certain combinations morpheme-final vowels reduce to open transition of neutral vowel quality. In certain combinations morphemes reduce medially by the loss of one or more morae. Compare 'tīhka *eat* in the following: 'tīhkaruʔi-nīʔ *I will eat*, 'tīkʙīnituʔi-nīʔ *I will always be eating* (['tīkʰʙīnituʔi-nīʔ] in which [kʰ] is approximately [kī] but without vowel morᴀ); 'puukU *horse* + 'kahnI *house* > 'pukuknI ['pukukʰNI] *barn*.

(3) t interchanges with r; and p interchanges with ʙ, utterance medially at morpheme boundaries under conditions not always phonologically determined. 'paʙiʔ *older brother*, nī-'waʙiʔ *my older brother*; 'tīʙoorī-maʔ *he is writing*, 'caa-nīʔ 'rīʙoorī *I write well*. After pause the p and t always occur: 'tenahpīʔa 'rīnikʷīri-nīʔ 'ɴuniʔ *I see the man singing*, but 'tenahpīʔa / 'tīnikʷīri-nīʔ / 'puniʔ (in which / indicates tentative pause). t (but not p) always occurs after i. 'ʔitī *this one* < ʔi 3rd person close + -tī nominalizer; 'ʔorī *that one* < ʔo 3rd person distant + -tī; 'piʙiapƗrīī *large ones* <'piapƗ *big*.

(4) ʔ + ʔ = ʔ. 'sariiʔ *dog* + -ʔa genitive > 'sariiʔa *dog's*.

pheme alternants. Distribution classes of stems and affixes are defined below.

Reference to affix classes is made in even century and/or decade numbers (e.g. reference to tense is made by 260). Reference to specific morphemes is made by the list number (e.g. reference to -tu?i future, is made by 261). The distribution of alternants in respect to each other is indicated in the list.

Class 100: 110, 120 1st and 2nd order derivational prefixes respectively; 130 derivational suffixes.

111. ca?-[3] *with an upward movement of the hand*
112. ma?- *pertaining to the hand*
113. ro?- *with a violent movement of the hand*
114. co?- *with the head*
115. ki?- *with the elbow*
116. hu?- *with the back*
117. ta?- *with the leg or foot*
118. kï?- *with the mouth or scissors*
119. ci?- *with something sharp*

121. na- reflexive

131. -pI̯ nominalizer
132. -? nominalizer
133. -pI[4] classificatory affix
134. -pï? classificatory affix
135. -ʙI classificatory affix
136. -ci? classificatory affix

Class 200: 201 infix; 210–250 verbal suffixes in relative order by decades.

201. -*V*-[5] imperative → (distribution restricted to an arbitrary class)

211. -kï benefactive

221. -ma completive
222. -?e habitual

231. -k^{w}a motion away

241. -yu verbalizer

251.1 -tu?i future → (in positive statements)
251.2 -wa?i future → (in negative statements)
252. -?i past
253. -yU past (?)
254. -nU past (?)

Class 300: 310–330 nominal suffixes in relative orders by decades.

311.1 -tï nominalizer, pre-plural → (with S^{s} except as described for 311.2; and after all verbal inflection except 251.1)
311.2 -ɸ nominalizer, pre-plural → (with S^{pr} 1st and 2nd persons)
311.3 -nï nominalizer, pre-plural → (with S^{n}, and after 251.1; never occurs except with 321 or 322)
312.1 -? subjectivizer → (with S^{pr} 1st and 3rd persons singular)
312.2 -nI̯ subjectivizer → (with S^{pr} 2nd singular)
313. -?a genitive
314. -hka (meaning undetermined)

321.1 -*V* plural → (occurs except as defined in alternants below)
321.2 -mï plural → (with S^{pr} nï 1st person exclusive, in proclitic position, and fluctuates with 321.1 after ta 1st person inclusive and mï alternant of 2nd person)
321.3 -nI̯ plural → (with S^{pr} 1st and 2nd persons in plural free forms and 1st person exclusive in enclitic position)

[3] Morphemic alternation of affixes in class 110 is not completely analyzed. Each affix in this class has an alternant with final h instead of final ?.

[4] Classificatory affixes here listed do not make any determinable difference to the root. That they are derivational affixes, however, is shown by the fact that they are generally lost from R in the formula R + S = S.

[5] *V* is used here and in morpheme 321.1 as a morphophonemic symbol for a lengthening of a single vowel to two morae.

322.1 -k^{w}Ĭ dual → (fluctuates freely with 322.2 except as defined in alternants below)

322.2 -h dual → (occurs in objective forms (plus 331); otherwise fluctuates freely with 322.1 except as in 322.3)

322.3 -hï dual → (occurs on proclitic S^{pr})

323. C_1V_1- non-singular (for alternants and patterns of reduplication see **3.1.1.**).

331.1 -ha objective → (generally with singular S^{n} ending in 131 or 132; reduction occurs: -? + -ha > -?a)

331.2 -hta objective → (with a group of S^{n} ending in a bilabial consonant + I)

331.3 -i objective → (with a group of S^{n} ending in -tO and -cO without assimilation and reduction; occurs with S^{n} other than all above, and after 311, 321, or 322, with assimilation and reduction)[6]

2. Stem formation. Comanche stems are derived according to the formulae below. Patterns of stem formation do not coincide with stem classes. In these formulae a root (R) is a morpheme, free or bound, to which derivational affixes may be attached, or with which other roots may be compounded. R_1 is a free root. A stem (S) is a root, with or without derivational affixes, to which inflectional affixes may be attached, or which functions as an uninflected particle.

Stems contain only one stress, generally on the first syllable, or none at all in the case of clitic stems. Examples: 'puhihwI *money*, 'to?I *pipe*, 'tïrï?ai *work*, wa'sape *bear*, nï-'ʙia? *my mother*.

Formulae for stem formation cover observed formations, but do not imply that any root may occur in all possible formational combinations.

R_1 = S. 'pui? *eye*, 'wa?oo? *cat*, '?ara? *cross uncle*, 'tïhka *eat*, 'mi?a *go*, 'haa *yes*.

110 + R = S. 'tahpaana *sole of foot* < 117 + -paana *palm*; tahto'koo *big toe* < 117 + -to'koo *first digit*; mahto'koo *thumb* < 112 + -to'koo *first digit*; tah'tua *little toe*; 'co?nika? *hat* < 114 + -nika? *push into*; 'soko-kï ma-'ci?nikatï-nï? *I am sticking it into the ground* < 119 + -nika? *push into*; ma'cihorarï-nï? *I am digging it (with a stick or spade)* < 111 + hora *dig*; ?u-'hu?k^{w}Ĭri-?a?i-nï? *I spilled it with my back* < 116 + k^{w}Ĭri?a *spill*.

120 + R ± 130 = S. 'naʙoopĬ *picture* < 121 + 'poo *draw* + 131; 'narïhka *groceries* < 121 + 'tïhka *eat*.

120 + (110 + R)[7] = S. 'narohtïk^{w}a?i-?ïnĬ *you hit yourself (with hand)* < 121 + (113 + tïk^{w}a *hit*).

R + 130 = S. 'tïhka? *table* < 'tïhka *eat* + 132; 'piapĬ *big* < 'pia- *big* + 131; 'tïhkapĬ *meat*; 'poopĬ *drawing* < 'poo *draw* + 131; 'huupI *tree* < 'huu- *wood, log, tree* + 133; 'paapI *head* < 'paa- *head* + 133; 'tenahpï? *man* < 'tenah- *man* + 134.

R + S = S (in which the S preceding the equation sign may be any stem including the resultant of this formula; however, the maxi-

[6] Final back vowels become voiced front vowels on the same level. The resulting vowel cluster is reduced by loss of the second member. 'yuhhu *grease* > *'yuhhii > 'yuhhi *grease* (object); 'wihtua *bucket* > *'wihtuei > 'wihtue *bucket* (object). When following 311 and 321 or 322, the assimilation applies to both morphemes. 'sonipĬnïï *grass* (plural) > *'sonipĬnïïĬ > 'sonipĬnii *grass* (plural object); 'hʊʙiyanïh *songs* (dual) > *'hʊʙiyanïhi > 'hʊʙiyanihi *songs* (dual object).

Examples of alternants 331.1 and 331.2: 'wa?oo? *cat* > 'wa?oo?a *cat* (object); 'pïhïsïkïï *peach* > 'pïhïsïkïiha *peach* (object); 'tosahwI *silver* > 'tosahwihta *silver* (object); 'tosiitO *hoof* > 'tosiitoi *hoof* (object).

A stem which does not fit the pattern: 'yïhnï *porcupine* > 'yïhne *porcupine* (object).

[7] Immediate constituents are divided in this way because *120 + 110 (without R) never occurs. 110 + R = S above, but S cannot be substituted for 110 + R here because S resulting from other formulae do not occur with 120.

mum observed number of roots in any combination is four: 'piarosawoвikni *big white house* < 'pia- *big* + 'tosa- *white* + 'woвi *wooden* + 'kahni *house*). Examples: 'pukuknI *barn* < 'puuku *horse* + 'kahni *house*; '?esiwanah *gray blanket* < '?esi- *gray* + 'wanah *blanket*; 'tïk^{w}ïk^{w}itu?i-?urïk^{w}ï *they* (dual, distant) *will sit down to eat* < 'tïhka *eat* + yïk^{w}i *sit down* (non-singular); 'tïrïehpï?rïï-ca? ma-'вiacahora?I *the children dug out a deep hole (with hand)* < 'pia- *big* + 111 + -hora *dig*; 'puica?nika? *eye glasses* < 'pui? *eye* + 111 + -nika? *push into*; 'koвena-вoopï *portrait* < 'kooвE *face* + 121 + 'poo *draw* + 131; nï-'вia?-ca? 'pianacahki?a?I *my mother scratched herself deeply (with something sharp)* < 'pia- *big* + 121 + 111 + -ki?a *scratch*; 'nïmïk^{w}a?ihpï? *Indian woman* < 'nïmï *Indian* + 'k^{w}a?ih- *woman* + 134; '?eso?ekaвItï *pink* < '?eso *not quite ripe* + '?eka- *red* + 135.

3. Stem classes. The above stems are divided into distributional classes S^{s}, S^{n}, S^{p}, on the basis of potential occurrence with alternants of 311. Stems as such are not equated with words.

3.1. S^{s} may take alternants 311.1 or 311.2, with the formal sub-classes S^{q}, S^{v}, S^{e}, S^{pr}:

3.1.1. S^{q} (qualitative stems) take 323. They are inflected for future according to the formula S^{q} + 241 + 251. '?eвIвI *blue* + 311.1 > '?eвIвItï *blue, blue one*; '?eвIвI *blue* + 241 + 251 > '?eвIвIyutu?i-marïï *they will be blue* (-marïï 3rd person plural close).

The initial syllable of stems beginning $C_1V_1C_2$- reduplicates with 323 in two patterns: $C_1V_1C_1V_1C_2$- and $C_1V_1hC_1V_1C_2$-. 'huyunihtï *cylindrical* > 'huhuyunihtïk^{w}ï *cylindrical ones* (dual); 'tïtaatï *little one* > 'tïhtïtaatïk^{w}ï *little ones* (dual).

Some S^{q} show morphophonemic reduction when occurring with 323, with some initial $C_1V_1C_2$- becoming stem-initial -C_1C_2- when occurring with 323 (see fn. 2). 323 + 'pohotatï *thick, thick one* + 321 > 'pophotatïï *thick ones* (plural).

Some non-S^{q} which contain as the initial morpheme a root which generally forms an S^{q} may take 323 in the same manner. ?ï-'totsaвimoroo?nïï-ca? 'koi?nïï *your white cows died* < 'tosaвimoroo? *white cow*; ?ï-'pïвiarosaвimoroo?nïï-ca? 'koi?nïï *your big white cows died* < 'piarosaвimoroo? *big white cow*.

3.1.2. S^{v} (verb stems) do not take 323. They are inflected for future tense according to the formula S^{v} + 251. 'mi?a *go* + 311.1 > 'mi?arï-tah *we* (dual inclusive); *are going, we are the ones going* (-tah 1st person dual inclusive); 'mi?a *go* + 251 > 'mi?aru?i-tah *we* (dual inclusive) *will go*.

3.1.3. S^{e} (phonologically bound enclitic stems) may take 200 and/or 300 (but not 323). These stems are considered clitics in that (1) they are phonologically bound to words[8] being normally unstressed and not uttered in isolation; (2) they occur after any inflection on the stem, although they may themselves be inflected. 'kahninïï-kïyutu?inïï *the ones who will be in the houses* < ('kahni *house* + 311) + (-kï + 241 + 251 + 311). 'tenanïï-ma?aiyutu?inïï *the ones who will be with the men* < ('tenah- *man* + 311) + (-ma?ai *with* + 241 + 251 + 311). Immediate constituents are divided on the analogy of 'nï-ma?aiyutu?i-?urïk^{w}ï *they* (dual) *will be with me*. nï 1st person exclusive (see **3.1.4**) does not take 200 inflection.

3.1.4. S^{pr} (pronoun stems) may take no other inflection than 300 (but not 323). In clitic form they are unstressed.

Non-demonstrative S^{pr} (1st and 2nd persons): nï 1st person exclusive, ta 1st person inclusive, ?ï~mï 2nd person (?ï is never inflected with 311; mï is always inflected with 311). nï-вia? *my mother*, ?ï-'po?oro? *your* (sg.) *pig*, mïhï-'sarii? *your* (dual) *dog*.

[8] For the formation and definition of words, see 4.

Demonstrative S^{pr} (3rd person): ma 3rd person close, si and ʔi[9] 3rd person close, so and ʔo 3rd person distant, su and ʔu 3rd person distant or out of sight. 'pae ma-'ʔuhtu *give him* (close) *the water*, 'sitɪ̈-ha ʔu-'ʙuniʔ *did he* (close) *see him* (distant)?

S^{pr} with specialized meanings: pï 3rd person identical with subject, ʙï 2nd person predual imperative. These have also a specialized distribution. pï appears only in proclitic position as possessor of nouns and verbal nouns. pï-'sariiʔ *his own dog*, pï-'kahni-kɪ̈-ʔuʔ *he is in his own house*. ʙï always appears in enclitic position inflected with 322. 'kʷaʙi-ʙïkʷɪ̈ *lie down* (dual)*!*, 'keta-ʙïkʷɪ̈ 'ʔïhkoitïkʷɪ̈ *don't go to sleep* (dual)*!*, nï-'ramiʔa-ʙïkʷï 'ʙuuniʔ *look at my brother* (dual)*!* < nï- 1st person exclusive + 'tamiʔ *younger brother* + 331 + -ʙï 2nd person imperative + 311 + 322, 'puniʔ *see* + 201.

ma, ʔo, ʔu and all non-demonstrative S^{pr} may be proclitic or last order enclitic. Proclitic position indicates possession of a noun or object (with objective inflection in the non-singular) of a verb or verbal noun.[10] nï-'ʙiaʔ-caʔ nï-'suwaitɪ̈ *my mother wants me, my mother is the one wanting me* < nï 1st person exclusive + 'piaʔ *mother* + -caʔ stative particle (S^p), nï 1st person exclusive (object) + 'suwai- *want* + 311.

Enclitic position (with 312 in the singular) indicates subject of a noun, a verb, or a verbal noun. ʔï-'pia-ʔuʔ *she* (distant) *is your mother*, mïhï-'tohpaʔi-marïkʷɪ̈ *they* (dual, distant) *hit you* (*dual*) (mï + 311 + 322 + 331; ma + 311 + 322); 'yaketï-ʔïnɪ̈ *you are crying*. If any word precedes the verb in the sentence, the pronoun subject is generally enclitic to that word. 'picipɪ̈ha-ʔoriï 'hiʙitïï *they* (distant) *are drinking the milk, they are the ones drinking the milk*.

Non-demonstrative S^{pr} may be free forms when inflected with 321.3 or 322.1. They carry stress in this form (see **4**). 'nïnɪ̈ *we* (plural exclusive), 'mïkʷɪ̈ *you* (dual).

Demonstrative S^{pr} may be free forms (with stress) when inflected with 311.1 or 314. (ma has never been found inflected with 314.) 'ʔitï *this one*, 'surïï *those* (out of sight), 'ʔohka *that one* (distant).

Demonstrative and non-demonstrative S^{pr} may cluster with other clitics (S^{pr}, S^e, S^p) to constitute a free form with one stress. 'sukïrɪ̈-ʔuʔ *it is over there* < su 3rd person distant + -kɪ̈ *in, at* (S^e) + 211 + -ʔu 3rd person distant + 312; 'nï-ʔuʔ *it is I*.

3.2. S^n (noun stems) may take alternant 311.3.[11] 'peekʷiniï *fish* (plural) < 'peekʷi *fish* + 311.3 + 321; tahto'kooniïkʷɪ̈ *big toes* (dual); 'tiʙoopɪ̈niï *paper* (plural); 'piʙarosawoʙikniniï *big white houses* (plural).

One group of S^n does not take 323 in the non-singular. 'puiʔnïkʷɪ̈ *eyes* (dual); 'kwasuʔuniï *shirts* (plural).

Two groups of S^n take 323 in the nonsingular: (1) stems which contain as the initial component a root which generally forms an S^q (see **3.1**); (2) a class of simple stems. 'yuyuupɪ̈niï 'tenaniï *fat men* < 'yuupɪ̈ *fat*; 'ʔïʔïrïʔniï *good natured ones* < 'ʔïrïʔ *good natured*; 'mumucipɪ̈nïkʷɪ̈ *sharp ones* (dual) < 'mucipɪ̈ *sharp*.

3.3. S^p (particle stems) never take inflection. They are of two types, free and bound, e.g:

Free: 'kee *no*, 'haa *yes*, 'nah *just*.

Bound: -caʔ stative particle (generally used in declarative sentences), nï-ʙaciʔ-caʔ ʔï-'paʙiʔ-ʙetɪ̈ *my older sister is the size of your older brother*; -seʔ narrative particle (gener-

[9] Meaning distinction between ʔ- and s- undetermined.

[10] For the formation and definition of words, see **4**.

[11] In one loan-translation, 'ʔohaʙItï *orange* (a fruit), 'ʔohaʙItïnïï *oranges*, both -tï and -nï (alternants of 311) occur in sequence in the non-singular. Apparently the S^q 'ʔohaʙI *orange* (color) and -tï with which it generally occurs as a noun, form an S^n in this case. S^q take 323 in the non-singular while the S^n 'ʔohaʙIɪ̈, now the name of a specific object, does not. In one informant's speech the transformation has been made more complete: 'ʔohaʙItïïʔ *orange* (with 132 nominalizer).

ally used in tales), 'surï-kĭ'-se' 'wihnu 'rïya-ainU *he then died*; -ha interrogative particle, 'surĭ-ha pin'haa?a 'caa 'kĭsuka *does he like sugar?*

4. Word formation. Stems and affixes may be combined into words according to formulae presented below. Words generally contain only one major stress. A second stress may occur late in a long word. 'tĭkkahni-'ku-ma? 'mi?arĭ *he is going to the dining hall.* Words of each class are mutually substitutable in the syntactic positions defined for each class. Inflected words are partially identifiable by the class of the final affix with which they occur. If the final affix is of class 300 the word is a noun (N) or verbal noun (VN). If the final affix is one of class 200 the word is a verb (V). Words which consist of uninflectable S^p are particles (P).

Although clitic S^p and S^{pr} enter into word formation they are not included in formulae for word classes. S^p and proclitic S^{pr} do not change the class of the word in which they are bound and are therefore non-pertinent to the formulae. Enclitic S^{pr}, always subject, are not generally in the same immediate constituent with the word in which they are bound. It is syntactically convenient to define word classes without the limitations which enclitic S^{pr} place on them. 'po?ro?a-ma? 'ruhiвIti 'suwaitï *he wants the black pig* [N (object) -S^{pr} (subject), N (object), VN]; 'kanaвihci?-ma? *he is slender* [N-S^{pr} (subject)].

4.1. Verbs (V) may take subject or object; they may not be subject or object.

$S^v \pm 200 = V$. nï-'rïi-ca? 'narĭmï-kU 'kahnimi?a?I *my friend went visiting in town* < S^{pr} + S^n ('rïi *friend*) + S^p = N (subject), S^n ('narĭmï *town*) + S^c (-kU *in*) = N (object), S^v ('kahnimi?a *go visiting*) + 252 = V; 'mahitenahpï?-ca? pï-'pake вï-'nahu-ma 'wĭsaka?I *the warrior split his arrow with his knife* < S^n ('mahitenahpï? *warrior*) + S^p = N (subject), S^{pr} + S^n ('pake *arrow*) + 331 = N (object), S^{pr} + S^n ('nahu *knife*) + S^c (-ma *with*) = N (object), S^v ('wĭsaka *split*) + 252 = V.

$S^q + 200 = V$. 'sïsïïpe?yutu?i-marïï *they will be even (level)* < 323 + S^q ('sïïpe? *even*) + 241 + 251 = V, + S^{pr} + 311 + 321 (subject). 'pïprïyutu?i-marïï *they will be heavy* < 323 + S^q ('pïrï *heavy*) + 241 + 251 = V, + S^{pr} + 311 + 321 (subject).

N + S^c + 200 = V (in which N is the resultant of any formula in **4.2**). 'tĭhtĭtaatï-ca? 'woвiawonïï-kĭyutu?i *the little ones will be in the boxes* < 323 + S^q ('tĭtaa *little*) + 311 + S^p = N (subject), [S^n ('woвiawo *box*) + 311 + 321 = N] + S^c (-kĭ *in*) + 241 + 251 = V. 'marïï-kĭyutu?i-ma? *it will be in them* < ['S^{pr} + 311 + 321 = N] + S^c + 241 + 251 = V, + S^{pr} + 312 (subject). ka'huu-ca? 'cena-kuhpayutu?i *the rat will be inside the fox* < S^n (ka'huu *rat*) + S^p = N (subject), S^n ('cena *fox*) + S^c (-kuhpa *inside*) + 241 + 251 = V.

4.2. Nouns (N) may be subject or object; they may take a subject but may not take an object inflected with 331.

N_1 is substitutable in the last formula of this section; N_2 is not. Otherwise both are referred to as N.

$S^n \pm 300 = N_1$. ka'huunïï-ca? 'kĭhtaaвicipĭha 'rĭhka?I *the rats ate the cheese* < S^n (ka'huu *rat*) + 311 + 321 + S^p = N (subject), S^n ('kĭhtaвicipĭ *cheese*) + 331 = N (object), S^v ('tĭhka *eat*) + 252 = V. '?arĭka-ca? 'wacipĭ *the deer is wandering* < S^n ('?arĭka *deer*) + S^p = N (subject), S^n ('wacipĭ *wanderer*) = N.

$S^q \pm 300 = N_1$. pimo'ro?raiвonïï-ca? 'keksuatïï *the cowboys are near* < S^n (pimo-'ro?raiво *cow-white man*) + 311 + 321 + S^p = N (subject), 323 + S^q ('kesua *near*) + 311 + 321 = N. 'pĭhtĭti-nï? ma-'?uhtu?I *I gave him the heavy one* < S^q ('pĭhtĭ *heavy*) + 311 + 331 = N (object), + S^{pr} + 312 (subject), S^{pr} + S^v ('?uhtu *give*) + 252 = V. '?orï '?esiвItĭ 'rĭhka?-ruhka *that gray one is under the table* < S^{pr} + 311 = N (subject), S^q ('?esiвI *gray*) + 311 = N (subject),

[S^n ('tïhka? *table*) = N] + S^e (-ruhka *under*) = N.

'S^{pr}[12] + 300 = N_1. 'surï-?u? *it* (distant) *is he* (distant) < 'S^{pr} + 311 = N, + S^{pr} + 312 (subject). 'sitï-ca? 'rïtaati 'woвikniвa?I *he* (close) *has a little wooden house* < 'S^{pr} + 311 + S^p = N (subject), S^q ('tïtaa *little*) + 311 + 331 = N (object), S^v ('woвikniвa?i *have a wooden house*) = V. pimo'roo-ca? '?urii 'makUye?I *the cow chased them* (plural) < S^n (pimo'roo *cow*) + S^p = N (subject), S^{pr} + 311 + 321 + 331 = N (object), S^v ('makUye *chase*) + 252 = V.

V + 300 = N_2 (with limitation noted in **4.3**). '?ekaвIyutu?inïï-?urïï *they will be red ones* < [S^q ('?ekaвI *red*) + 241 + 251 = V] + 311 + 321 = N, + S^{pr} + 311 + 321 (subject).

N_1 + S^e ± 300 = N_2. '?ok^{w}etïï-kĭrï-?urïï *they are in the river* < [S^v ('?ok^{w}e *flow*) + 311 + 321 = N] + S^e (-kĬ *in*) + 311 = N, + S^{pr} + 311 + 321 (subject). '?e?ekaвItïï-ca? '?e?eвIвItïï-'kïma? *the red ones are beside the blue ones* < 323 + S^q ('?ekaвI *red*) + 321 + S^p = N (subject), [323 + S^q ('?eвIвI *blue*) + 311 + 321 = N] + S^e (-kïma? *beside*) = N. 'tihtïtaatï-ca? 'woвiawo-kUpatĬ *the little ones are in the box* < 323 + S^q ('tïtaa *little*) + 311 + S^p = N (subject), [S^n ('woвiawo *wooden box*) = N] + S^e (-kUpa *in*) + 311 = N. 'paapasi-nï? 'sahuвa-ma?ai-ku 'mahiaru?I *I mixed the potato in with the stew* < S^n ('paapasI *potato*) + 331 = N (object), + S^{pr} + 312 (subject), [S^n ('sahuвa *stew*) = N] + S^e (-ma?ai *with*) + S^e (-kU *in*) = N (object), S^v ('mahia *mix*) + 251 = V. 'tïpinïï-hoikIt-Ĭca? '?ekaвItĬ *the thing around the stones was red* < [S^n ('tïpi *stone*) + 311 + 321 = N] + S^e (-hoikI *around*) + 311 + S^p = N (subject), S^q ('?ekaвI *red*) + 311 = N.

[12] Any formation with S^{pr} unstressed is a clitic within a larger word unit (see **4**).

4.3. Verbal nouns (VN) may be subject or object; they may take subject and object.

S^v ± 200 + 300 = VN (note that VN = N formationally, in V + 300 = N above, but distributionally it is distinguished by the fact that it may take an object inflected with 331). 'tïhoitï-ca? '?arïka?a ?a'вehka?I *the hunter shot the deer* < S^v ('tïhoi *hunt*) + 311 + S^p = VN (subject), S^n ('?arïka *deer*) + 331 = N (object), S^v (?a'вehka *shoot*) + 252 = V. 'kohtoorï-?urïh *they* (dual) *are building the fire* < S^v ('kohtoo *build a fire*) + 311 = VN, + S^{pr} + 311 + 322 (subject). 'surï pï-'tïetuka?a 'muruka?etĬ 'haвï?eeyU *he, blowing out his little lamp, was asleep* < 'S^{pr} + 311 = N (subject), S^{pr} + S^n ('tïetuka? *little lamp*) + 331 = N (object), S^v ('muruka *blow out*) + 222 + 311 = VN (subject), S^v ('haвi *sleep*) + 222 + 253 = V. hu'cu?anï? 'yaketi 'naka?I *I heard the bird singing* < S^n (hu'cu? *bird*) + 331 = N (object), + S^{pr} + 312 (subject), S^v ('yake *sing*) + 311 + 331 = VN (object), S^v ('naka *hear*) + 252 = V. ka'huu-ca? 'haniвihta 'kuu?etï 'rïyai *the rat that used to store away the corn is dead* < S^n (ka'huu *rat*) + S^p = N (subject), S^n ('haniвI *corn*) + 331 = N (object), S^v ('kuu *store away*) + 222 + 311 = VN (subject), S^v ('tïyai *is dead*) = V. 'tïhka?eeru?inïï *ones who will be eating continually* < S^v ('tïhka *eat*) + 222 + 251 + 311 + 321 = VN.

4.4. Particles (P) may not be subjects or objects, nor may they take subjects or objects. Only those particles which carry their own stress may stand as words.

S^p = P. 'haa 'cihariyaihumi?arï-nï? *yes, I am hungry* < S^p ('haa *yes*) = P, S^v ('cihariyaihumi?a *go hungry*) + 311 = VN, + S^{pr} + 312 (subject). 'ke-nï? 'wananapĬha 'suwaitĬ *I do not want the sock* < S^p ('kee *no*) = P, + S^{pr} + 312 (subject), S^n ('wananapĬ *sock*) + 331 = N (object), S^v ('suwai *want*) + 311 = VN.

TWO VIEWS OF OTOMI PROSODY

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0. General statement
1. The two theories
2. Correspondences and differences
3. Word division
4. Rising tonemes or geminates
5. Non-final vowel sequences
6. Sinclair and Pike on stress
7. Early scholars
8. Distribution of tones
9. Tonal accent versus stress accent

0. The types of prosodic contrast reported for Mezquital Otomi by Sinclair and Pike correspond in the main with those found by us.[1] However, where they explain the prosody in terms of a system of phonemically significant syllable tones, it seems to us that their evidence as well as ours points only to accent as the key.

1. The difference between their analysis and ours can be shown by citing a few examples as represented and analyzed in the two systems. For purposes of easier comparison we use their spelling in both versions, except for the prosody. Accent marks in their writing are grave, acute and wedge (inverted circumflex) respectively for low, high and rising tonemes. We use only the acute sign to mark the accented syllables; properly it should be omitted on words of three or more syllables, since they regularly have initial accent, but it is kept in this paper for the purpose of clarity in the discussion.

A. fàní, fání, xí, zǎ, rà bàcí pá rà fání, rà présídénté, rà présídéntè ʔmóndá.

B. faní, fáni, xí, záa, ra bạcí pá ra fáni, ra présidente, ra présidente ʔmónda.

Meanings: *throw liquid, horse, blood, stick, the boy sells the horse, the president, the president of Mexico.*

Sinclair and Pike hold that every syllable has one of three tonemes, low, high and rising. There is a limitation in phrase final in that (94): 'A tendency to high intonation at the end of an utterance [sentence] seems to permit only high and rising tonemes in that position. (Yet high tonemes in that position have been heard in a medium high tone, and a rising glide changed to a descending glide.)' In this statement we need not hesitate to substitute 'sentence' for 'utterance' since the phonetic characteristics are the same. Sinclair and Pike do not take up the question of phrases as subdivisions of the sentence; we suspect that if they did they would make their rule apply to every phrase.

Our analysis recognizes a partly free pitch-stress accent and also automatic features of tonality. Monosyllables may be either stressed or unstressed, but unstressed ones never stand at the end of the phrase. Disyllables may have either initial or final stress. Trisyllabic and longer words have automatic accent, always on their initial syllable. All accented syllables are high-pitched by comparison with certain unaccented syllables but need not be the highest in the phrase. An unaccented word-final syllable occurring before an accent in the same phrase is low-pitched; thus, ra and nte in ra présidente ʔmónda. An unaccented non-final syllable occurring after the accent, as in the second and third syllables of présidente (borrowed from Spanish with shift of accent), is normally at the same pitch as the accented syllable. An unaccented phrase-final syllable is normally as high or higher than the accented

[1] See Donald E. Sinclair and Kenneth L. Pike, The Tonemes of Mezquital Otomi, IJAL 14.91-8 (1948). Our material comes from field work mainly carried out by Frances Leon in 1940, while we were connected with the Departamento de Asuntos Indígenas of the Republic of Mexico.

syllable; thus, nte in the simple phrase ra presìdente or nda in the longer phrase ra présidente ʔmónda. But there are stylistic variations. For instance, it was noted that cheery greetings are characterized by a musical drop at the end; final accented vowels are protracted into geminates with the tonal drop on the added syllable thus produced.

2. The correspondence between the two analyses is remarkably close. With a few simple rules one can transpose from one to the other system, for the most part without ambiguity. We were able to test this for many of the examples quoted by Sinclair and Pike, and we found ourselves corresponding in the practical record as well as in theory. An examination of a few apparent contradictions reveals we believe, weaknesses in their analysis and the soundness of ours.

3. In our study of Otomi we found that words of three or more syllables were always accented on the first. They would be high-high-high in phrase-final if one were noting tone instead of accent. But Sinclair and Pike give various sequences, including low-low-high, low-high-high and high-low-high, as: bìmpèʔí *he works*, dàñúʔní *he will eat*, dífàdí *I pasture* (94). However, these are verb forms made up of more than one morpheme. If the prior morphemes are taken as proclitics instead of prefixes, as we believe they should, the difficulty disappears. In our analysis of the prosody, the examples would be bi mpɛ́ʔí, da ñúʔni, dí fadí,[2] comparable with particle-noun phrases as ra bạcí *the boy*, rà bàcí in Sinclair and Pike.

Borrowed words provide strong support for our treatment. If there were no limitation on the prosody within a single word, then why such forms as gránádá and présídénté? The tonality of the Spanish originals would lead one to expect low-high-high and low-low-high-high (final low is not possible).

[2] We have di fadí, without accent on the proclitic. We suspect that pronominal proclitics occur both with and without accent.

On citing such phrases as yà gránádá, Sinclair and Pike make an observation (95) that is very pertinent to our problem: 'Notice the higher pitch of substantives in relation to their articles in both Spanish and Otomí.' If low-high sequences are possible in article-noun constructions and if there are no limitations within the word, words like gránádá would surely have been borrowed with low tone on the first syllable. It should therefore be obvious that we do have a prosodic limitation in Otomi words and that the verbal paradigmatic forms given by Sinclair and Pike do not constitute one-word units. In terms of our analysis, all trisyllabic and longer borrowings from Spanish had to be accented on the first syllable because only this pattern exists in Otomi.

Sinclair and Pike also mention (97) 'words of two or three syllables which use only low tonemes.' These are discussed in section 8.

4. The rising toneme of Sinclair and Pike largely corresponds to geminate vowels in our analysis. Their description (91) supports our interpretation: 'The rising toneme begins in the low register and rises to the high register. It is distinctly heard in the phrase-final position where it sounds like a rearticulated vowel, the second being high.' If they did not draw the conclusion that seems so obvious to us, it must be simply because it did not occur to them. In presenting their prosodic analysis, they enumerate and discuss various alternative theories, including quantity, stress-accent, tone or one of the combinations of these' (96). It is evident therefore that they somehow failed to examine the hypothesis of geminates.

To interpret a given vocalic segment as phonemically a geminate means that it is considered to be a sequence of two vowels, which happen to be identical. We find in fact that the geminates in Otomi are entirely comparable with other sequences of vowel plus vowel. Thus záa *stick* is quite like hái *earth* in length, stress, rhythm and tone. It is unfortunate that Sinclair and Pike give so

few examples of two-vowel sequences. They show t?èí *pasture* (92) and ?bàí *to be* (93) with markings that can only mean rising tone. They give ?bǎí *to be or live* (*in a place*) as a pair with ?bàí *to be* to show tonal contrast. But the meanings they give are sufficiently close to suggest that these are actually free or contextual variants of the same element.

Sinclair and Pike give three instances of vowel sequences in borrowed words, with tone markings as follows (94, 95): índió *Indian*, góbiérnò (?móndá) *governor* (*of Mexico*), pérìódíkó *newspaper*. Thus, in two instances they have no tone mark on the first of the two vowels in contact, in the third instance they show a low-high sequence. Our observation was that these sequences were always clearly bisyllabic. In failing to mark tones in the first two cases, Sinclair and Pike must have been influenced by their knowledge of Spanish. In the third case they may have been struck by some tonal movement. From our analysis, there is no special reason to expect a rising tone here and no reason not to expect it; both syllables are unaccented and non-final and, as we have stated, it is usual for these syllables to be about as high as the preceding accented syllable itself. However, since in a direct sequence of vowels (no intervening consonant) any change of tone would be very readily noted, it is not surprising to find a rise indicated. It need not be inferred that the ì was actually lower than the preceding accented syllable, since Sinclair and Pike were operating with a two-tone system and might have assumed without testing that any tone lower than a high was a low.

5. The general equivalence between Sinclair and Pike's rising tone and our geminate vowels does not hold in non-final position. Where they have numerous examples of non-final rising tonemes, we have very few non-final geminates. These results of ours are consistent with the general rarity of non-final vowel sequences, as reflected in their material as well as ours. The only case in Sinclair and Pike is ie in the borrowed word góbiérnó. Similarly most instances in our material are in borrowed words. The only other cases we seem to find are in the suffixed forms of y?ái *carry water*, for example di y?áihee *we carry water*. Other verbs having vowel sequences in their stem forms are simplified in their suffixed forms, as šéi *scrape*, di šéhee *we scrape*. Such reduction is quite normal in Otomi. It is the same as the shortening of disyllables to monosyllables in compounding, which Sinclair and Pike illustrate with e.g. ?àgí *pain* + dá *eye* > ?ǎdá *pain of the eye* (94). This general principle applied to verb stems with geminate vowels gives for example di xǎhee *we seize*. Applied to substantives containing geminate vowels, we get for example mǎ *long* + dó *stone* > màdó *long stone* (Sinclair and Pike's example, p. 94). Thus, we have little reason to expect any great number of non-final geminate vowels in Otomi.

As for the instances of rising toneme shown in Sinclair and Pike, we are able to compare with our recordings in four cases. In three cases we have simple disyllables with accent on the first syllable; thus, for dǎngí *big*, θǔhú *hunger*, ?yǒfrí *muleteer*, we have dángi etc. In one case we have final accent: their xǒní *metate*, our xəní. In view of the general infrequency of vowel-vowel sequences, it is justified to ask that these rising-high words be checked for possible phonetic error.

Sinclair and Pike show non-final rising tone regularly in borrowed words of the type líbró *book*, gěšó *cheese*, skwělá *school*. Since Spanish tends to lengthen penultimate open syllables, there is a basis for explaining gemination of the vowel in these cases. However, we found them to be simple disyllables with initial accent.

The phonetic description given by Sinclair and Pike (91) is of interest: 'Word medially the rising glide is scarcely audible to a foreign ear when spoken at normal speech rate, and is easily unnoticed, especially if the investigator is accustomed to using non-phonemic glides in his own language. If the investiga-

tor has written the vowel as long when the glide was enunciated in a protracted manner, as informants do to aid the hearer, then when the word is spoken in normal speech he is not likely to hear any convincing amount of length.' We too found our informants geminating accented vowels when asked for very slow pronunciation. However, in normal speech all traces of the gemination disappeared, including the tonal movement. These cases contrasted with the few instances of basic non-final geminates that we encountered, as di zíihee *we bring*, with consistent two-syllable rhythm and length in ii as well as in ee.

6. In a language like English, the accented syllable is marked by length and loudness several times greater than that of unaccented syllables. In Otomi we found no notable length differences and the ratio of loudness seemed not always as great as in other languages we knew. Furthermore, from English and other languages we were accustomed to pitch phenomena that helped to set the accented syllables off with great clarity. As a result the Otomi final high tone often led to the impression of accent in our earliest field work. In this our experience was not wholly unlike that of Sinclair and Pike who say (97): 'In words of two or three syllables, an investigator who is listening for stress-accent encounters the difficulty of thinking he hears the accent first on one syllable then on another of the same word as it is repeated by his informant.' But we did not draw their conclusion that 'stress so weak and difficult to locate is presumably non-phonemic and may be attributed to intonational or accidental causes.' Once we recognized that the tone of the last syllable was a correlate of final position, it became easy to recognize the accent. We also found reflexes of accent in the articulation of consonants. For instance, the sounds which Sinclair and Pike represent as s š f x θ (our zh žh bh gh dh) are strongly articulated and aspirated [s' etc.] in accented syllables but weakly articulated and not noticeably aspirated in weak syllables.

In spite of their denial of the importance of stress in the quotation given above, Sinclair and Pike corroborate our description elsewhere in their paper (97 ftn.): 'In many words where there are two high syllables in succession, the second one is often spoken with much less stress, and yet maintains the same general pitch.' This remark evidently applies to words of the type fání, our fáni. They also say: 'The stress appears stronger at the beginning of the rising syllable rather than at the end, and the latter part of the glide less forcefully enunciated, except where utterance-final intonation enters.' Omitting the last proviso, the description agrees exactly with what we observed in words like their zǎ, our záa. The proviso is puzzling unless it applies to an altogether different type of word, perhaps to geminate vowels with accent on the second. We have recorded such words in a few instances: yə́ə́ *mano de metate* (compare yə́ə *root*), šií *leaf*, mụ́ụ́ *squash*. Comparable non-geminate sequences are: seį *pulque*, ny?oí *mouse*, m?əí *breast*, t?ɛí *pasture*, bhəí *hat*. A caution: we recorded all final two-vowel sequences with accent on the last in the beginning of our research, and it is possible that some of these examples show prosodic errors which were not eliminated in our later work.

Still another remark about accent by Sinclair and Pike (97 ftn.): 'We seem to detect a tendency to a slightly greater emphasis on the first syllable of a word whether it be high, rising, or low.' This statement is not very concrete. One would need to know what kinds of words were considered and to what extent it applies to each prosodic type. Also it contradicts the authors' declaration that in high-high words the second syllable 'is often spoken with much less stress' ('much' contradicts 'slightly').

It has already been shown that Sinclair and Pike describe the 'high toneme' in final position as varying sometimes to middle pitch. Such variability fits in with our in-

terpretation that some of these final syllables are actually unaccented. Another detail in Sinclair and Pike that may speak against their tonal analysis, though it need not be so taken, is their testimony (92) that 'the high tone is not strictly level but tends to drop slightly.'

7. Sinclair and Pike mention early scholars of Otomi, such as the presbyters of the Hospital Real, Juan Sanchez, Luis de Neve, who wrote an accent sign on the last syllable of low-high words and wrote nothing over high-high words. De Neve explains that words written without accent marks have 'acento breve'; evidently this means penultimate stress, the common type in Spanish. Thus, these scholars arrived at the same conclusion as we. Sinclair and Pike comment (95): 'These early systems of accentuation illustrate a first hindrance to the recognition of tone in Otomí, i.e. the tendency of a person reared in a language with phonemic pitch-stress to interpret the tonal contrasts of Otomí as accented on the high syllables.' To us they prove rather that, despite intonational differences, the accentual systems of Otomi and Spanish are of the same general variety.

8. The information which Sinclair and Pike give about the distribution of tonemes on one and two-syllable words provides interesting corroboration of the accentual nature of the system. Their examples of low-toned monosyllables include mostly particles normally used in non-final position: yà *the* (pl.), rà *the* (sing.), šì emphatic particle. Their example pà *to go* sounds like a verb in their translation, but we wonder if this is not simply the particle illustrated in some of their examples, as (94): nzánθó díšókí pà gàcíšą̀ xá rà t?ʌhá = nzánθo, dí šóki, pa ga cíšą, xá ra t?ʌhá '*regularly, I open up, to take them, to the mountain*. The element pa is like Spanish para in form and function, and in all probability is derived from it.

As for two-syllable words note the statement (94): 'In certain disyllabic words which are high in both syllables, the tone on the last syllable may vary between high and low.' The examples given indicate that the high variant occurs at the end of the phrase and the low one non-finally. The words concerned, e.g. rátó *six*, are in our analysis accented on the first syllable, and the pitch of the second syllable varies automatically according to the simple rules we have given for unaccented syllables. Disyllabic low-high words, being actually accented on the second syllable, do not show any variation.

They say that the monosyllabic noun kú *brother* has a low-toned variant and is the only noun that does. However, they do not give the conditions under which this variant occurs. Obviously it cannot occur in phrase final. Is it a compounding form?

For verbs, they speak of monosyllables, disyllables and trisyllables with all low tones. The trisyllables they cite (97) are actually disyllables used with a proclitic, as: pà dàdą̀t?ą̀ rá θízá = pa da dąt?ą rá θíza *in order to tie their huaraches*. Since verbs frequently occur in phrase-final and since phrase-final must have high tone, we must assume that these are actually low-toned variants rather than low-toned verbs. It would seem we are then dealing with some kind of accent loss in medial position, occurring under circumstances that need to be defined. Accent loss is of course known to occur in many, perhaps every, accent language.

9. One might reason that an accentual system might be based on tone instead of stress, thus avoiding the controversy as to whether Sinclair and Pike or we misjudged the gross phonetics of Otomi prosody. But this attractive speculation does not fit the facts of any language we know. It is true that length and tone are often present with accent and help to identify it, and that phoneticians sometimes have difficulty with languages where the melody and rhythm are new to

them. However, so far as we know, all accent systems are based at least in part on loudness. We are forced then to be skeptical about Sinclair and Pike's denials of stress in Otomi and to give fullest importance to their statements affirming stress. We urge them to reexamine Otomi speech, preferably with the aid of laboratory instruments, concentrating on crucial cases of contrast as suggested by the accent theory offered in this paper. We venture to guess that the facts will stand out with all clarity, once they learn to segregate the final high tone of phrases from the remaining phenomena.

LEARNING A SECOND LANGUAGE FIRST

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1. Spanish learned before Chontal
2. Reasons
3. Case studies
4. Effects on Chontal
5. Baby talk

1. Chontal has been classified as a Hokan language; it has no close relatives. It is spoken by some 8000 or 9000 Indians living in the mountains and coastal plain of southern Oaxaca, Mexico. This paper is concerned only with the dialect spoken on the coast;[1] I have no data on the Sierra dialect. Chontal is a linguistic island, surrounded on three sides by Zapoteco speakers and bounded on the fourth side by the Pacific. The nearest sizable towns of Mexicans and Zapotecos are two or three days away over rough horseback trails. In spite of this isolation, at present and apparently for at least a generation past the first language taught to the children is Spanish; Chontal appears to be a part of the adult culture and is learned when the adolescent enters into the cultural activities of the adult community. Although the last census lists about 2000 monolinguals, I have yet to find one. They may well be speakers of the Sierra dialect, however.

2. There are a number of reasons for Spanish being learned first.

(1) One informant volunteered the information that at the time of the revolution or shortly thereafter her father forbade further use of the Indian language in their home because of government opposition to it.

(2) Around the turn of the century there was a peaceful invasion of Zapotecos in search of new homes in Chontal territory. Chontal was then still the language of the home. The Zapotecos scorned Chontal but were unable to use their own language to communicate with the Chontales so resorted to Spanish. Some of them retained Zapoteco for communication among themselves, but used Spanish with their children. The children, however, picked up Chontal from their playmates. Some of these children, now grandparents, are more at home in Chontal than in Spanish, although they may still be classed as definitely bilingual. Some are even trilingual, in the sense of understanding even if not speaking all three languages. All appear to have retained the practice of talking Spanish to their children and reserve Chontal for communication with adults.

(3) Customs learned at home are tenaciously clung to and carried over from one's own family background to one's new home as a young married adult. The custom of speaking Spanish may be transmitted in the same way. The tenacity of family custom is seen in extreme cases in individuals' refusal to take pills or even inability to swallow them because "my mother never taught me to."

(4) The modern trend to Spanish has been stimulated by the presence of the government school and by the parents' desire for their children to do well in school. They fear that knowledge of Chontal will impede the child's progress in school, which is taught in Spanish,—hence they forbid the use of Chontal and address the child only in Spanish.

(5) Adults prefer to use Chontal among themselves, but any communication with the outside world must perforce be carried on in

[1] Data have been gathered during the past six years on field trips under the auspices of the Summer Institute of Linguistics. (1942–8); Chontal of Oaxaca is not to be confused with Chontal of Tabasco, a Mayan language.

Spanish. Many of the people are seasoned travelers, making frequent trips to the nearest market town for supplies not to be had in their own villages, or to some remote village outside the area for a fiesta.

3. Some examples might be cited of individuals observed for varying periods of time.

Amalia Petriz, 23, grew up in a Spanish-speaking home, began speaking Chontal generally after her marriage at the age of 17. Spanish was also the language of her new home since her husband was brought up similarly. The adult neighbors, however, spoke Chontal predominantly so she learned to use Chontal with them. With her husband and children she spoke Spanish; with her mother-in-law and other adults she spoke Chontal. When the grandmother attempted to teach Amalia's young son the Chontal word for *cat* Amalia rebuked her saying, "Don't teach him that. That's not a mišᵛo?, that's a gato."

Jose Cabrera, 28, Amalia's husband, is thoroughly at home in Spanish but until recently was noticeably deficient in Chontal. When he was elected to the office of town policeman for a year, his Chontal improved through the association with the town fathers who carry on their business largely in Chontal.

Jovita Fermin, 17, has recently adopted the long skirts and full blouses of the adult women and with it is trying to learn as fast as possible the adult language: Chontal. When she stumbled over some words she apologized explaining that she was still learning.

Paulina, in her late thirties, consistently spoke Chontal to me when I visited in her home. When she turned to address her three-year-old son she invariably switched to Spanish.

Augustina and Leopolda Gallegos, in their fifties, are among those of Zapoteco parentage who learned Spanish at home but Chontal from their playmates. They speak Chontal to their contemporaries, either Chontal or Spanish to their older children (those who now may be classed in the adult category), and exclusively Spanish to the younger children. A young adult addressed in Chontal may answer in either language.

Maura Muñoz, a greatgrandmother, was heard to address her grown son in fluent Spanish, although she consistently spoke Chontal to me. Aurora Piñon, about 40, wished to assure me of her consistent use of Chontal; she explained (in Spanish), "No se castellano," *I don't know Spanish.* It sometimes appears as if matters of importance are explained in both languages.

Children do hear their elders use Chontal and become familiar with with some of the words. Some might even be said to have Chontal loan words in their Spanish dialect. Thus, Josecito, 5, assured me regarding another child, "Su cabeza esta muy kuš." *His hair is very curly* (Chontal kuš *curly*).

4. The effect of such long-standing bilingualism on the language as a whole appears to be slight.[2] There are many loan words for concepts or items of material culture which have been introduced but these are completely assimilated into the phonemic pattern. Spanish loan nouns occur with the Chontal possessive prefixes and with the plural suffix -ʔ. Borrowed nouns beginning with vowels are taken over with the addition of initial ʔ-. Thus ʔánima *heart* (Sp. ánima *soul*). Spanish infinitives may occur following the Chontal verb ʔe- *do, make*, to express

[2] Spanish appears to have made further inroads in the dialect spoken in the village of Chacalapa, on the western fringe of the area. It is reported that there Spanish nouns are often substituted for their Chontal equivalents, although the Chontal affixes are still retained. Thus a Chacalapan might say lokasa (Sp. casa) for lonexúL' *your house*. The same sort of substitution along with other confusions was noted in conversation with a youngster who was making a valiant attempt to use his obviously unfamiliar 'native tongue'. He produced the statement tés išiñák' lopérro *what does your dog know?* (Sp. perro *dog*) for tés kipuftíñe lomílᵛa *what is your dog's name?*

some action without direct parallel in Chontal: ʔéduy bisitár *she visits* (Sp. visitar). The Spanish infinitive here appears to function similarly to a Chontal noun in the same position.

One characteristic of the speech of those who are still, like Jovita (see 3.), learning to speak Chontal is the lack of the glottal stop in clusters or in general the lack of glottalized consonants. This lack is sometimes compensated for by geminating the consonant as in xañ̃í for xaʔñí *no*. Another young adult was derided for not making the distinction between /n/ and /ñ/ in layñá·na *my mother*.

The phoneme /c/ is gradually being replaced by /s/ in the speech of the younger generation. In two cases investigated /c/ had been completely replaced by /s/. In others there was partial replacement, either by free variation or by the use of /s/ for /c/ in some words and not in others. The phonemic status of the two sounds in the older dialect is attested in the minimal pair acalá? *egg white*, asalá? *wings*.

This variation was noted in the early stages of field work. Later checking with informants of varying ages and sex indicated four degrees of development in the loss of the phoneme. One group retained the /c/ in all the words elicited. Another group retained the /c/ in most words but varied to /s/ in certain words of frequent use such as the verbs páce- *make*, and pó·co- *bathe*. The third group used the /s/ in most words. Their use of /c/ was variable but tended to be in less frequently used words, or in those in which they were coached by other speakers if they forgot the word in question. The fourth group had lost the /c/ entirely.

The loss of /c/ presents an interesting morphophonemic problem.

In verb stems, any stem initial alveolar consonant is replaced by the corresponding alveopalatal consonant in all third person forms. This type of palatalization does not occur with consonants produced at other points of articulation,[3] nor does it seem to be conditioned by any other factor than the person of the verb. Palatalization by i or y is common in the language[4] but these sounds do not account for stem initial palatalization in the third person.

Stem initial t, c, s, c', n, n', l and ł are replaced by tʸ, č, š, č', ñ, ñ', lʸ and łʸ respectively. Note the following examples:

(1) Stem initial t-: tán- *pound*, tʸámpa *he pounded;* táy- *carry*, tʸáypa *she carried;* táyg- *grind*, tʸáygúy *she is grinding;* téx- *bite*, tʸéxúy *he is biting;* tóy- *plant*, tʸóymˈa *he will plant.*

(2) Stem initial c-: cáʔ- *sift*, čáʔyúpa *it got sifted;* cólʸi- *get up*, čólʸiñáypa *he got up;* cóg- *spill*, čóguy *he is spilling it;* cé·- *go*, čé·pa *he went.*

(3) Stem initial s-: ságo- *eat*, šágotá *he will go eat;* sáng- *taste*, šángúy *he is tasting;* sóy- *dance*, šóypa *he danced;* skí- *pack*, škípa *he packed;* smá- *sleep*, šmánawá *he went to sleep;* snáx- *drink*, šnáxúy *he is drunk;* syó- *laugh*, šyópa *he laughed;* síñ- *see*, šímpa *he saw.*

(4) Stem initial c'-: c'áł- *break*, č'áłnáypa *it got broke*; c'angáy- *follow*, č'angáyyúy *he is following*; c'áñi- *kindle*, č'áñipá *he kindled it*; c'íng- *get black*, č'íngúy *he is getting black*; c'ó·s- *cool*, č'ó·spa *it cooled.*

(5) Stem initial n-: náx- *hit*, ñáxúy *he hits*; nánse- *rob*, ñánsepá *he robbed;* né- *grow*, ñépa *she grew*; náł- *complete*, ñáłpa *he completed it;* náf- *shake*, ñáfkúy *he is shaking it;* nóy- *put to bed*, ñóyyúy *she puts her to bed.*

(6) Stem initial n'-: n'ax- *buy*, ñ'áxúy *he buys*; n'él- *complain*, ñ'élkúy *he is complaining;* n'áxki- *pay*, ñ'áxkiyúy *he is paying.*

[3] Stems beginning with other consonants make no differentiation in the stem form for third person. The use of first and second person pronouns make those persons clear in all verbs and the context (or a noun subject, or, if necessary, some third person pronoun) makes it evident that the form refers to third person.

[4] Palatalization and other morphophonemic details will be discussed in my forthcoming paper Chontal Phonemes and Morphophonemes, to appear in IJAL.

(7) Stem initial l-: lagé?- *sow*, lʸagé?pa *he sowed*; lé·- *walk*, lʸé·dáy? *they are walking*; láy?- *mix*, lʸáy?pa *she mixed it*; léf'- *lift (a person)*, lʸéf'ta *she will go lift her*; ló- *play*, lʸópa? *they played*.

(8) Stem initial ł-: łafí?- *chat*, łʸafí?pá? *they chatted*; łó?- *move*, łʸó?pa *he moved it*.

The loss of /c/ presents a special morphonemic problem with reference to stems of (2) and (3). Speakers who use /s/ for /c/ in verbs of (2) retain the č- of the third person forms of those stems, namely type (2), but use š- for the third person forms of type (3). Thus, unless the language as a whole dies out before the /c/ is lost from most idiolects, it will be necessary at some future date to indicate in some way which stems in s- form the third person in č- and which in š-.

5. One interesting sidelight on the preference of the older generation for Chontal, however, appears in certain of the words used in baby talk to small children.[5] Grandmother, or even sometimes mother, will use a combination of Spanish words with certain syllables reminiscent of the Chontal words they represent, such as: vas á hacer pupu (cp. pó·co- bathe) *are you going to* (meaning *do you want to*) *take a bath?*; vas á hacer tutu (cp. tʸú- *nurse*) *do you want to nurse?*; vas á hacer čuču (cp. caláy- *urinate*) *are you going to wet?;* tiene čiči *it's dirty* (cp. c'íg- *defecate*) tienes wiwi (cp. awí? *sore*) *do you have a sore?*

[5] George Herzog has called my attention to a somewhat comparable situation among the Comanche. Comanche baby talk has been replaced by English baby talk. But when the child gets beyond baby talk he talks Comanche, not English at home. Thus, until the age of four or so he uses English baby talk; thereafter until he goes to school he speaks Comanche, and from school days on he is increasingly bilingual. See now Joseph B. Casagrande, Comanche Baby Language, IJAL 14.11–14 (1948).

GOAJIRO (ARAWAK) II: NOUNS AND ASSOCIATED MORPHEMES[1]

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6. Morphology
7. Nouns
8. Adjectives
9. Numerals
10. Pronouns

6. Morphology. The following parts of speech may be conveniently distinguished in Goajiro: nouns, adjectives, numerals, pronouns; verbs, adverbs, prepositions, postpositions, conjunctions, and interjections. The prepositions are in reality inflected postpositions (see **22.1**) and the few postpositions proper are analogous to case suffixes (which are otherwise lacking in Goajiro).

7. Nouns.

7.1. Gender. One has to distinguish between the masculine (m) and non-masculine (n) gender, which are formally distinct in many nouns and in most adjectives. The gender of a noun is easily seen in the different form of the article (see **7.5**) used with it. As a rule, masculine nouns comprise words for men and males (or proper nouns of men); non-masculine words comprise all others, i.e., words denoting women (including feminine proper names) or females or inanimate things. Notice that in animal names the male is expressed by a noun with the masculine article (e.g., pa'akaih *bull, ox*, from Spanish vaca, uik·aih *male snake*), whereas the female is expressed by a noun with the feminine article (e.g., pa'aka *cow*, uik·a *female snake*). Certain names of things are supposed to be animate and of masculine gender, e.g., kaik·aih *sun* (but *the moon*, whether supposed to be animate or not, has non-masculine gender: kašik·a), u·čikaih *mountain*. A *growing tree* is masculine (unu'ukaih) according to MI (but RO has unu'ukal, as well as u·čkal *mountain*, with the non-masculine article), whereas *wood* is unu'ukal (n). According to some (TS) a *growing tree* is properly unu'ulia (see **7.19**(3)). The *thumb* is masculine (nia tahap·ira mulia'ukaih *this is my thumb*, literally, *big finger*, RO), but the names of the other fingers are non-masculine.[2] The word pulo·wi, which denotes a certain *evil spirit* (or rather *power*), is non-masculine, but yo·luha·kaih *the devil*, as well as Malaiwakaih *God*, are both masculine (AO). The word -aī *life, heart, soul*, etc., which is frequently used in a personal sense, is non-masculine, e.g., ase·s taī *my heart will drink* (= ase·š taya *I will drink*), e'ke·s taī *my heart will eat* (= e'ke·š taya *I will eat, am hungry*).

7.2. All nouns that are indefinite (or not specified as to male or female gender) are construed as non-masculines, e.g., nohots (n) wayu· *there is no Indian* (*man or woman*), i.e., *no one*, but nohoš (m) nia *he is not there* (FJ). Similarly, auktəš haī wayu· *he kills his life* (in Goajiro, n) *the Indian*, i.e., *he kills people* (AO), huyakwa alihuna *his* (n) *picture, a white man*, i.e., *the picture* or *drawing of a white man*, šia šie·rəī təra *that is the wife of such a person* (in Goajiro, n; ésta es la mujer de fulano, RO).

7.3. Regarding the rules of grammatical agreement, Goajiro somewhat differs from English. For example, an adjective or pronominal word construed with the possessive form of a noun (see **7.11**) may rather agree with the gender of the owner than with the

[1] Sections **1** to **5** are given in Goajiro (Arawak) I: Phonology, IJAL 15.45–56 (1949).

[2] The name for the male organ is probably masculine. I have heard aitue·š tako·skali (from Spanish cosa), an obscene expression which I cannot analyze.

noun they determine, e.g., kasač·i pənə·lia *what* (m) *is your name?* (if addressed to a man), but kasač·ir (n) pənə·lia, idem (if addressed to a woman).[3] In an analogous way one may find taček·əĭ taĭ *I desire, my heart* for *my heart desires* (RO) or waček·əĭ waĭ *we desire, our heart* for *our hearts desire* (RO).

7.4. Article. This term might conveniently be used to designate a morphological increment to the noun, indicating gender and number. Literate speakers of Goajiro declare this to be a definite article in the sense of Spanish grammar, but it is rather clear that its function is not in any way analogous to that of the Spanish article.[4] It may evidently be added to any noun in any function. As Goajiro nouns are easily used predicatively (wayu· *an Indian* or *it is an Indian*), it might be supposed that the article has principally a nominalizing function. This is also seen in, for instance, sulu'ukal *the interior* (RO), from su·lu' *in it* (see **23.1**). As the article has a special masculine and non-masculine form, it shows the gender and number of the noun to which it is added. Nouns preceded by a possessive prefix (see **7.12**) may take the article, although they are more often used without it. Nouns in the vocative usually do not have the article.

7.5. The article is suffixed to the normal or emphatic form of the noun (cf. **5.3**). In this way a phonetic unit is created, for the accent sometimes moves to the article according to the rules stated in **4.1** and **4.2**. The forms of the article are as follows:

Singular (m) -kaih (-kali) (n) -kal (-kala, -ka, -k)[5]

Plural (m and n) -kana (-kanə, -kənə, -kono; cf. **5.6**)
-kali·rua

RO often has pre-aspirated forms of the article (-'kaih, -'kal, -'kana, etc.), e.g., to·la-'kaih *man, male*, anuwa'kal *canoe*, hime'kal *fish*, etc.; cf. **5.18.**

7.6. Examples of the article with different types of nouns:

(1) with nouns ending in a long vowel or diphthong: wayu·kaih *Indian*, wayu·kali·rua *Indians*, hi·e·yu·kali·rua *women* (RO; notice that the plural article may be added to singular or plural nouns alike), ari·kal *squirrel* (RO), pala·kal (*the*) *sea*, həsi·ka (*its*) *flower* (but həsik·a *its tail;* see below), waralapaika *sparrow hawk*, səikal (RO), səika *hammock* (chinchorro).

(2) With nouns ending in a short vowel: to·la'kaih *man, male* (RO), pa'aka *cow*, pinčikal (RO), pi·čka *house*, anuwa'kal *canoe* (RO), mawikal *cotton* (RO), la·pika *pencil* (Spanish lápiz), sət·ihaka (TS), sət·ihakal *ring* (Spanish sortija), maima šiliwalakal *many stars* (RO), maima me·sakali·rua *many tables* (RO), puet·aka, puet·ak *door*.

(3) With nouns ending in -h: uik·aih (or uihkaih) *male snake*, uik·a *female snake* (uih), amak·a *horse* (AI; amah), mawak·al *pigeon* (from mawah, RO, mowah, MI; cf. **3.2**), skik·al (*the*) *fire* (RO; s(i)kih), ihpak·al *stone* (ihpah), wo'puk·al, wo'puk·a *road, way* (wo-'puh), mak·a *earth, ground* (mah), kašik·al (*the*) *moon* (kaših), həsik·a (*its*) *tail* (cf. həsi·ka *its flower*, above), kasa hupušuale kasak·a *all things* (todas las cosas, AO).[6] Often kaihkaih *sun, day* is heard, being stressed on the last syllable (originally kaih, kali).

(4) With nouns ending in a consonant or nasal vowel or the glottal stop; these often represent normal forms of those enumerated under (2): te'pičkali·rua *children* (from te-'pič), hi·e·tkal *woman* (RO; from hi·e·r),

[3] Hence in kasač·ir hənə·lia *what is her name?* one must suppose that the non-masculine form of the interrogative word refers not to the non-masculine word *name* but to the non-masculine owner.

[4] In Celedon's grammar (op. cit.) I find no reference whatsoever to this grammatical element.

[5] The form -kal is mostly used by RO, but -ka is more common in Nazaret (e.g., by TS). For the form -k (e.g., puet·ak *door*, haĭk *its life, heart*; FJ), cf. **5.4.**

[6] Cf. kasap·ula(hatə) (*place*) *for a thing*, kasap·-ulahatsa *what is it for?* (FJ), in which also the following consonant is geminated.

etkal, etka *dog* (from ere, er), etkali·rua (TS), etkana *dogs*, luopko *arroyo* (luopo), wəĭka *water* (wəĭ), paĭka *your life, heart* (-aĭ), kalĭka *hen* (kali·na), u'či·čĭkana *little birds* (RO; u'či·čĭ), unu'ukal *tree* (RO), *wood* (unu').

As appears from the examples, no functional distinction is possible between -ka and -kal or between -kana and -kali·rua. The plural forms may be added to singular or plural nouns (the sense being plural) or adjectives, e.g., wašin·ukali·rua *rich people* (AI; from wašir *rich*).

For certain pronouns used as a real definite article, see **10.4.**

7.7. An indefinite article arises from the frequent use of wane· *one* before a noun; the form is usually unstressed, wane (cf. **4.3**), e.g., wane la· *a (certain) lake* (AO), wane airhal *a song* (AO). I have no example of the suffixed article being used in this case.

7.8. Plural. The Goajiro noun without the article (**7.5**) forms a plural (and dual) by adding either one of the suffixes -yu· and -irua, which are used indiscriminately with masculine and non-masculine nouns. The form of the noun is sometimes modified (cf. the examples). It should especially be observed that a final short -i (which is generally suppressed in the normal pronunciation) contracts with the initial vowel of -irua, the result being -i·rua (cf. **5.11**). Examples:

(1) with -yu·: to·layu· *men* (e.g., katep·aši to·layu·kania *do the men paint?* AO), Kusi·nayu· *the Cosina* (RO; see O), tačõyu· *my children*, p(ə)čõyu· *your children*, hi·e·yu· *women* (AO), piama hi·e·yu· *two women* (RO; cf. wane·si hi·e·r *one woman*).

(2) with -irua: Kusi·nairu *the Cosina* (cf. under (1)), uli·rua *snakes* (AO; from uih), u·či·rua *mountains* (AO; from u·či), ta'uirua *my eyes* (AO), s(ə)tənairu *its wings* (TS), aše'eni·rua *clothes* (AO; from aše'aĭ, Spanish manta).[7] This suffix, or the equivalent -iwa· (see **5.15** (2)) may be added to verbal forms or inflected postpositions as well (cf. **22.2** (2)).

7.9. Instead of -yu·, AI sometimes uses -muyu (= -muyu·?), e.g., wale·muyu *friends*, wa'irumuyu *friends*.[8] RO has the suffix -le·ya (which is common in the pronouns; see **10.1**) in, for instance, wa̧'ule·ya *our eyes* (from -a'u).

7.10. If a noun is accompanied by a plural word (e.g., maima *much, many*) or a numeral (and sometimes in other cases), the singular form of the noun is often used, e.g., maima anuwa *many canoes*, maima ihpak·al *many stones* (RO), maima šiliwala *many stars*, maima unu' *many trees* (RO), amah waima *many horses* (AI), pienčiški· amak·a *forty horses* (AI), šiale·ya te·rəĭ *these are my wives* (RO), we·rəĭ *our wives* (RO), wayu· waya *we are Indians* (RO). The rule is, however, not universal; it may be noticed that the singular wayu· *Indian* is often (as in other Indian languages) used collectively of the tribe.

7.11. Possessive construction. The Goajiro noun, which has no case inflection,[9] consequently lacks a possessive form. The possessive construction consists in coordination of the nouns expressing the owner and the owned (the latter generally preceding), e.g., asa·la pa'a or asa·laš pa'a *beef*, literally *cow meat, meat (of) cow*, unu'u'pana *leaves of trees* (RO), hi·yapal(hana) hama' *the temple of the hammock loom* (from hi·ya *woven fabric*, in which h- might be a petrified possessive prefix; cf. below). Usually the noun expressing the owned thing is provided with a possessive prefix (see **7.12**) referring to the noun expressing the owner, as in sa'u pinčkal *the door* (literally *eye*) *of the house* (RO; properly *its eye, the house*), sa'u te'ki· *my ear* (literally *its opening, my head*; RO), sahuna

[7] The final -airua in the above words seem an irregular product of contraction. The vowel -a in the singular is heard short, but may (phonemically) be -a· or -ah.

[8] The latter word, wa'iru, is sometimes supposed to be the origin of the Spanish *Goajiro*. A Goajiro Indian is now called wayu· *man, Indian*.

[9] Unless the postpositions (see **23.1**) be reckoned as case suffixes.

(hahuna, MI) pinčkal *the roof of the house* (RO), hulo·la pala· *the noise of the sea* (FJ), nə'čŏ wayu· *the Indian's son* (RO), hupuya Me·kolo *Mekolo's* (fem.) *house* (AO).

7.12. Possessive inflection. There are no possessive pronouns in Goajiro, but in conformity with most American Indian languages the noun is capable of a possessive inflection by means of prefixes corresponding to our possessive pronouns. (The prefixes are the same as the personal prefixes in the finite verb; see **15.3.**) The possessive prefixes all begin with a consonant (referring to the various persons in the singular and plural), followed by a vowel (which varies partly according to the person, partly according to the noun stem). In this way different sets of possessive prefixes arise.

(1) In nouns originally beginning with a consonant the following are commonly used:[10] ta- *my*; pu- *thy, your* (sing.)[11]; nu- *his* (m); sə- (west), hu- (east) *her, its* (n); wa- *our*; hu- *your* (plur.); na- *their* (m and n).

Examples: ta'čŏ *my son*, pu'čŏ *thy son*, nə'čŏ (nčŏ) *his son* (RO); ta'uih (C), ta'ul (NC) *my foot*, pu'uih, pu'ul, pu'uli (NC) *thy foot*, nu'ul (NC) *his foot*, wa'uli·rua *our feet*, hu'uli·rua *your feet* (pl.); ta'tah *my skin*, pu'tah *thy skin*; ta'tənahut *my friend*, pə-'tənahut *thy friend*; tanu·lu (tanu·t) *my neck*, punu·l *thy neck*; tače (tač), pəč, nəč (nuč) *my, thy, his breechcloth* (NC).

(2 a) Nouns beginning with the vowel a- take the following prefixes: ta- *my*; pa- *thy*; na- *his* (m); sa- (W), ha- (E) *her, its* (n); wa- *our*; ha- *your*; na- *their* (m and n).

Examples: ta'u *my eye*, pa'u *thy eye*, na'u *his eye*, sa'u, ha'u *her (its) eye;* tahap·u *my hand*, pahap·u *thy hand*, nahap *his hand*, sahap *her hand* (from ahap·u *hand*; RO); taï (taina, tainaï)[12] *my life, heart, soul*, paï *thy life*, etc., haï (saï, AI) *her, its life*, etc., and with the article: 'taïka, païka, nəïka (= naïka).

(2 b) If the a- is long (a·-), the vowel remains long in the prefix, e.g., ta·nək *my mouth*, pa·nək *thy mouth*, wa·nək *our mouths*; ta·ləï *my grandson*, pa·ləï *thy grandson* (from a·luni; AI, however, has nə·ləï *his grandson*).

(3 a) Nouns originally beginning with i- have the following possessive prefixes: te- *my*; pi- *thy, your* (sing.); ni- *his* (m); ši- (W), hi- (E) *her, its* (n); we- *our*; hi- (?) *your*; ne- *their* (m and n).

Examples: te'ki· *my head*, pi'ki· *thy head*, ni'ki· *his head*, ši'ki· *her head* (RO); te'pia *my house*, pi'pia *thy house*, ni'pia *his house*, š(i')pia *her house* (RO); we'pia *our house(s)*; temia(hatə) *my provisions, provender*, šimia-hatə (AI), himia(hatə) (AO) *its provender*, nemia *their provisions*. So also: teye· *my tongue*, piye· *your tongue*, niye· *his tongue* (RO; although Celedon, op. cit., p. 162, gives yé *lengua*) and niyakwa *his picture* (AO; although *picture* is given as ayakwa).

(3 b) If the i- is long, the prefixes are (according to **5.10** and **5.11**) tai-, pi·-, ni·-, wai-, etc., e.g., pi·mat *your lips*, ni·mač·ira *his lips*, hi·mata *her lips* (TS), waimat(a) *our lips*.

(4) With an initial u·- the prefixes appear as: tau- *my*; pu·- *thy, your* (sing.); nu·- *his* (m); hu·- (E), su·- (W) *her, its* (n); wau- (?) *our*; hu·- *your*; nau- *their* (m and n).

Examples: tauwala *my brother*, pu·wala *thy brother*, nu·wala *his brother*; taumaï *my land*, pu·maï *thy land*, nu·maï *his land*, hu·məï *her* or *your* (pl.) *land*.

(5) When the initial stem vowel is e·-, the prefixes are: te·- *my*; pie·- *thy, your* (sing.); nie·- *his* (m); we·- *our*; but there are very few instances of this, e.g., te·rəï *my wife*, pie·rəï *thy wife*, nie·rəï *his wife;* te·čï *my husband*, etc.

7.13. There are traces of an indefinite possessive prefix ka- *someone's*, which is used in very special constructions. For examples, see the sections **7.19** (6), **10.6** (1), and **10.7**, in which ka- has related functions. The analy-

[10] Cf. Arawak proper (de Goeje, op. cit., p. 57).

[11] Nouns beginning with a labial often have no prefix in the 2d person singular, e.g., pialu'umaï *to your house* (for pi'pialu'umaï).

[12] As in ya taina *here is my heart*, ya tainaï *in my heart* (en mi corazón), a'is taï pu'tuma *I love you (my heart aches for you)*, malaka taï punaï *I love you* (TS; literally *the same as my heart for you* (?); cf. **10.9** (3)).

sis of these is, however, rather problematic; a close connection between this ka- and the positive prefix ka- in verbal forms (see **20.4**) seems to exist.

7.14. Some words hardly ever occur without a possessive prefix, e.g., ši·e·r or hi·e·r (*her*) *brother-in-law*, hu·ya *year* (*of it*), etc.

7.15. Possessive form. Many simple nouns (especially names of parts of the body) incorporate the aforesaid possessive prefixes without any other modification (cf. the above examples). But most other nouns change their form when used with the possessive prefixes. There are especially two standard modifications, viz. by means of the suffixes (1) -ī (-ni) and (2) -se·. The rules for their respective use are not apparent. Examples:

(1) with -ī: ta'anuwaī (-wəī) *my canoe* (anuwa), tasi'iraī *my girdle* (si'ira), taitaī *my calabash* (TS; from i·ta), tahi·kəī *my string* (AO; from hi·ka *hico*, *jico*), tali·plaī *my book* (from Spanish libro), tayəlī *my tobacco* (yəih), tala·pī *my pencil* (Spanish lápiz); similarly: taumaī *my country*, etc. (see under **7.12** (4)), of which the stem has not been found independently (cf. mah *land*, with which it may be connected), and tainaī *my life*, *heart*, etc. (see under **7.12** (2 a)).

(2) With -se·: tayəi(h)se· *my tobacco* (AO; cf. under (1)), wayəi(h)sairua *our tobacco* (AO), tače'ese· *my tongue* (= tače'e), tasət·ihase· *my ring* (TS), tauyase· *my age*, here pu·yase· *what is your age?* (from hu·ya *year*; see **7.14**). Instead of this, RO (and others) often have -ši, e.g., tasət·ihaš *my ring*, tamawiš *my cotton*, wapatauši *our finger nails*, takaralahəš *my feather gear* (FJ). Also notice the common and irregular tasap·a·ts *my shoe(s)* (from sapa·ta; cf. **5.11**).

7.16. Certain nouns have a special derived form which is used when no possessive prefix occurs, e.g., walaš, walaška (AO) *hair* (cf. tawala *my hair*), alaklaš *chief* (cf. talakla *my chief*, NC, walakla *our chief*, RO), e'ki·wi (AO), e'kiu (RO, FJ) *head*, e'kiuirua *heads* (cf. te'ki· *my head*). Several nouns which are not readily used without a possessive prefix (e.g., names of parts of the body; cf. **7.14**) prefix an a- when occasionally used alone, e.g., ahap·u *hand*, ahap·ira *finger*, anu·lu *neck* (cf. **7.12** (1)), a'če'e *ear*, a'təna *arm*, *wing* (cf. ta'təna *my arm*, hə'təna *its feather*), etc.; sometimes this a- is treated as part of the stem (e.g., ahap·u; see **7.12** (2 a)), sometimes not, e.g., alaklaš *chief* (cf. haraih pulaklakaih *who is your chief?* (NC).

7.17. Some nouns have rather different forms when used alone and with a possessive prefix. E.g., pinči (RO), pi·či (common at Nazaret), mi·či (AI) *house*, of which the possessive form is -'pia (RO)[13] or -puya (common at Nazaret), e.g., te'pia, pi'pia *my*, *thy house*, tapuya, puya *my*, *thy house*; wo·mu (AO), wo·m (NC)[14] *hat* forms takwo·ma *my hat*, pa'kwa·ma *thy hat*.

7.18. Certain nouns form their possessive form by means of an auxiliary word, e.g., ere *dog*, tamələ er(ə) *my dog* (NC), aulaka etka či· tamələ *this dog is mine* (AO); hama·a *hammock*, ta'u·la hama' *my hammock* (NC), ta'u·la *mine* (*of a hammock;* AO); pã *bread* (from Spanish), te'kəī pã *my bread* (literally *my food bread*; NC). A general auxiliary is -korolo *property*, etc., e.g., takorolo *my property*, *mine*, pukorolo *thy property*, *thine*, hukorolo *hers*, haraih korolo, or better, haraih kakoroloka hia *whose is it?* (cf. **10.7**), šia səkorot·əra (< korolo tərа) *it is hers* (RO).

7.19. Formation of nouns. The most common nominal formatives are: -'čõ (diminutive), -ule- (augmentative), -ia (instrumental), -lia (specific), -ih (agent), -waih (general nominalizer), and -la (resultative).

(1) -'čõ (which is properly a noun meaning *child*, e.g., ta'čõ *my child*) forms the diminutive of any noun, e.g., hintəič·õ *little boy* (RO), hintuč·õ *little girl* (RO; stem hintəli

[13] Also used in other compounds, e.g., kusi·napi *kitchen* (AO; from Spanish cocina).

[14] Cf. Celedon huómo (op. cit., p. 98).

(m) and hintulu (n)), nčõčõ *his little child* (RO), ha'u·čõ *little child* (RO), an·eč·õ *little sheep, lamb*, pa'ačõ *calf* (from Spanish vaca), susuč·õ *little bag* (Spanish mochila pequeña), həpəč·aunika (with article) *eyelet, loophole* (*of Indian sandal*; from həpəh). Another variety is -čī, as in u'či·čī *little bird* (RO).

(2) -ule- is only used in special construction, chiefly kasa'auleš *he has long legs* (AO), ša'aule *one who has long legs* (AO; cf. tasa'a *my leg*).

(3) -ia expresses that wherewith something is performed and is thus added to verb stems, e.g., ašəhia *pencil* (ašəha· *paint, write*), epit·ia *broom* (epit·a· *sweep*), ohu·nia or anulu'ulia *loom*, aseru·čihia *a saw* (RO; from ašeru·čaha- (*to*) *saw*, from Spanish serrucho, *a saw*; cf. **18.1**). With possessive prefixes these derivatives still have verbal force, as seen in pa'apa ta'anapahəī wane tatūkia *bring me that I may borrow to sleep on* (rather than *my means of sleeping*; RO), tašot·ia (pušot·ia, nišot·ia) (*a knife*) *to cut with* (FJ).

(3) -lia (which may be specific or individualizing) is found for instance in unu'ulia *a growing tree* (cf. unu' *tree, wood*), para·lia *beach, sea shore* (from pala· *sea*; cf. **5.15** (1); the word is also found in the place name Para·lialu'u *Puerto Estrella, = at the beach*).

(4) -ih (originally -li; m), -lə (-t, originally -lu; n), -li (originally -lina; plural) is an agent suffix, many times expressing a true active participle (cf. **16.7**), e.g., airhəih (m), airhət (n) *singer* (from air(ə)ha- *sing*), auktəih (m), auktul (n), auktəli (plural) *murderer* (usually stressed on the second syllable; cf. **4.1**).

(5) -waih (originally -wali; m), -walə (n), -wali, -waī (originally -walina; plural) may be added to almost any word or phrase to form a noun, e.g., wat·ahe·waih *one* (m) *from afar*, wat·ahe·walə, idem (n), wat·ahe·walina (or -waina) *people from afar* (from wat·ahe *from afar*, adverb), auktəš wayuwaī (or -wani) *criminals* (from auktəš wayu· *killing people*).

(6) -la (-lə, -l, -t) expresses the result of a verbal action and corresponds to a passive participle; it thus occurs with verbal stems (cf. -ih, under (4), from which it should be well distinguished). Examples: airhəl *song* (from air(ə)ha- *sing*), mahus air(h)ətka təra *that is a bad song* (AO), aiktuhul *parched maize* (cf. aiktuhuši *parching*, Spanish tostando). With a possessive prefix, a verbal function appears, e.g., takumahala, takumhala, takum·ala) *what I have done* (rather than *my done thing*; from kumaha- *do, perform*), pukumahala *what you have done*, tašəhal *what I have written* (from ašəha-), tə tairəkal *what I saw*, tə ni·rakat *what he saw* (from i·raka-); it is even possible to say nairakatpa·la (= nairaka-l-pa·la) *what they saw* (with the postfixed preterital -pa·la; see **16.2**). Of special interest is kasə·l *drinking place*, from asə- *drink*; it seems to mean *someone's drinking* and contain the same possessive prefix as is mentioned in **7.13.**

8. Adjectives.

8.1. It is important to distinguish between predicative and attributive construction.

Every adjective is capable of expressing an understood copula and is thus predicative. In this construction it is formally a verb and is placed at the beginning of the sentence (as happens to the verb). E.g., anaš maī wayu·kaih *the Indian is very good* or *it is a very good Indian* (RO), anas maī hi·e·tkal *it is a very good* or *handsome woman* (RO), anas maī te'pia *my house is very good* (RO), wihtəsə su·lia *the grass is green* (RO), wihtəsə pala·kal *the sea is blue* (RO), mulia'u maī karalautakal *the book is very big* (RO), lakla taya *I am old*, lakla təra *she is old*, ha'iš·i taya *I am warm* (of a man), ha'is·ə taya, idem (of a woman), mahuš·i waya *we are poor* (RO), mahus·ə *it is good for nothing*. Even in this construction a nominalization can take place, as in mutsias maī nə'tah *a negro* (literally *his skin is very black*; RO), məle'u su·uwa pa'akal *a cow with long horns* (literally *her horns are long, the cow*; RO). The verbal character of the predicative adjectives appears from the the fact that it may assume verbal inflected forms, e.g., maime·s *it will be enough* (from maima *much*).

8.2. In the attributive construction the noun follows the adjective, e.g., hi·etkal anas·ə *a handsome woman*, pinči anas·ə *a good house* (RO), wəi ha'is·ə *hot water*, wəi sa·mats *cold water* (RO), susuh məle'ukal *a big bag*.

8.3. Whether used predicatively or attributively, the adjective is either declinable or indeclinable. In the former case the masculine singular form ends in -š(i), the masculine and non-masculine plural form in -ši, and the non-masculine singular form, in -s(ə) (cf. the above examples). This also is the durative participial termination of the verb (see **16.2**).[15] Some adjectives, however, have different terminations. Thus wašir *rich* has the following forms: wašir (sing. m and n), wašin·u, waši, wašin·əirua (plural), e.g., e·ši wayu· wašin·u *there are rich Indians* (AO). Similarly those in -waih have special forms (see **7.19** (5)).

The gender of the adjectives follows similar rules to that of the nouns (see **7.1**).

8.4. The indeclinable adjective (e.g., mulia'u *great*, lakla *old*) is used for both genders and numbers, but sometimes there are alternative inflected forms (e.g., mulia'uši, mulia'usu = mulia'u). Both the noun and the adjective may be followed by the article, e.g., wayu·kaih lakla·kaih *the old Indian* (AI).

8.5. Comparison. The expression of a comparative and superlative is rudimentary. Usually the former is expressed in accordance with the following examples: aulaka Rupet·a mulia'u hu·lia Rafae·la *Roberto is bigger than Rafaelą*, aulaka Rafae·la ha'u·čŏ nu·lia Rupet·a *Rafaela is smaller than Roberto* (AO), aulaka tə wat·as hu·lia wane mah *this (place) is more distant than the other place* (AO). In these examples the introductory word aulaka is in reality a conjunction *and* (see **24.1**), which has a wide application in Goajiro sentence building. The adjective is followed by an inflected preposition *from* (see **22.2** (5)); hence hu·lia Rafae·la = *from (her) Rafaela* and nu·lia Rupet·a = *from (him) Roberto*.

There seems to exist no other superlative than the absolute one, expressed by maima (maī) *very, much*, e.g., wašir maī *very rich* (AO); see further the examples in **8.1.**

9. Numerals.

9.1. Like the common adjectives, the numerals have an attributive and a predicative (or verbal) function; according to this they differ as to form, but not as to position. The attributive forms are the plainest forms, which are also used in counting. They are the following (chiefly according to RO): wane·ši (m), wane·si (n; the latter form also used in counting), wane· (see below) for *1*; piama (piamă, see **5.5**; piă) for *2*; apunī *3*; pienči *4*; haraih *5*; aipirua *6*; akarač·i (AO) *7*; me ki·sal (RO), məki·sa (AO) *8*; mekie·tsə *9*; polo· *10*.

Numbers above 10 are compounds (partly with the postposition -məi *to*); the following forms are chiefly from TS: polo· wane·šiməi *11*; polo· piamaməi *12*; polo· haraliməi (AO) *15*; polo· aipiruaməi *16*; polo· karatsəməi *17*; apuniki· *30*; pienčiški· (AI) *40*; mekie·tsalhiki· *90*; polo·šiki· (west), polohiki· (east) *100*.

9.2. The above numerals usually precede the noun they determine, e.g., wane·ši to·la (or hašič·i) *one man*, wane·si hi·e·r *one woman* (RO), piama hi·e·yu· *two women*, piama kaih *two days* (RO), apunī pinčkal *three houses* (RO), apunī aih *three nights*, apunī u'či·čikənə *three little birds* (RO), šiliwala akarač·i *the seven stars* (AO). Also notice the construction su·wala č(i) piama *her two brothers*.

9.3. The form wane· *one* is used before all kinds of nouns; it is often unstressed (wane; cf. **4.3**) and used as a kind of indefinite article, e.g., wane· kaih *one day*, wane aih *one night*, wane hu·ya *one year*. It is also used

[15] Such words as halaši waya *where are we?*, wat·a·ši waya *we are far*, etc., may be considered as real verbs.

in a plural indefinite sense (= *some*), e.g., wane ale·wa *some friends* (RO).

9.4. The predicative forms (from *1* to *10*) are the following (chiefly according to RO): *1.* wane·šia (m), wane·sia (n); *2.* piamaši· (m), piamas(ə), piamasi· (AO) (n); *3.* apunīši· (m), apunīsi·rua (n); *4.* pienčiši· (m), pientsiəirua (sic; RO) (n); *5.* haraiši· (m), haraisəirua (n); *6.* aipiruaši· (m), aipiruasəirua (n); *7.* akaraiši· (m), akaratsəirua (n);[16] *8.* meki·sač·i· (m), meki·satsəirua (n);[17] *9.* mekie·tsač·i· (m), mekie·tsəirua (n); *10.* polo·ši· (m), polo·si·rua (polo·sia, polo·s, AI).

These mostly follow the noun, e.g., e·s amah polo·s *there are horses, they are ten*, i.e., *there are ten horses* (AI), pa·rutayu· polo·s *there are ten male horses* (from Spanish pardo? AI), mo·la polo·s *the mules were ten* (AI). The sense is often apparently attributive, as in piamas pinčkal *two houses* (RO), piamas aih *three nights* (RO), etkana polo·ši *ten (male) dogs*.

9.5. Ordinal numbers. These evidently are expressed by circumlocutions. AO has, for example, apunī tuan niyakwa *his third photo* (as if *three, the other photo of him*; modeled on tə wane· *the other* (*second*); **10.9** (1)).

10. Pronouns.

10.1. Personal pronouns. The personal pronouns in Goajiro are mostly fully stressed forms, which are construed as nouns. (They may even take the article; cf. below.) While certain verbal forms express a pronominal subject or object by prefixes or suffixes, others are construed with personal pronouns. The latter alternative applies to the predicative adjective also (e.g., anaš taya (m), anas taya (n) *I am good*, etc.). The following forms are used: taya, taya'kaih (m) *I, me*; pia, pia'kaih (m), pia'ka (n) *thou, thee, you*; nia, nia'kaih *he, him* (m); sia (W), hia (E) *she, her, it* (n); waya, waya'kan, wayakanəirua, wayale·ya (RO) *we, us*; hia, hiakan, hiairua (RO), hayakana (TS), šia'kan, šiale·ya, ši·rua (RO) *you*; naya, nairua, nayale·ya (RO), ni·rua *they* (m and n); šiale·ya *they* (n).

It appears that the forms in the 3d singular non-masculine person are (as often in the case of the possessive prefixes; see **7.12**) identical with those of the 2d person plural,[18] apart from the fact that the latter may be provided with plural suffixes. It nevertheless appears that the same plural form may also be used of a non-masculine plural, as in šiale·ya te·rəi *these are my wives* (RO).

10.2. The personal pronouns, when occurring as subject or object of a verb (or predicative adjective), are placed after the verbal form (or the adjective), e.g., ašəhəši taya *I am writing*, a'une·či taya *I shall go*, werəi waya'kan *we saw* (emphatic, cf. below; RO), anaš taya *I am good*. So also with a nominal predicate, e.g., wayu· taya *I am an Indian*, wayu· waya *we are Indians* (RO), Pšaina te· *I am a Pušaina*. In the latter case, however, a 3d person pronoun precedes the noun, e.g., nia tahap·ira mulia'ukaih *it (that) is my thumb* (RO), šia (or hia) tahap·u *it (that) is my hand* (RO), šia ta·nək *it (that) is my mouth* (RO). When used as an emphasizer, on the other hand, the personal pronoun follows, e.g., pa·nək pia'kaih *thy mouth (thou)*, waimat waya'kan *our lips (we*; RO); cf. werəi waya'kan *we saw (we)*, above.

A suffixed -ta· is dubitative and said to express the idea of *it seems to be* (Spanish seré, serás, será, etc.), e.g., tayata· *it seems to be I* (seré yo), piata· *it seems to be you* (sing.), niata· *it seems to be he*, nayata· *it seems to be they*. The suffix may be the same as in anataš *he may be good*, anatas *it may be good*, anu·ta· *here is*.

[16] From akarali-šia and akaral(u)səirua, respectively.

[17] From meki·sal-sia and meki·sal-su-irua, respectively. The terminations -i·rua and -əirua are probably phonetic variants (cf. **5.12**, Note 35).

[18] The characteristic h- no doubt originally belonged to the 2d person plural as in Arawak proper and as in the probably still more archaic Island Carib.

10.3. Demonstrative pronouns. The third person singular and plural may also be expressed by another set of pronouns, which may conveniently be called demonstrative. These, too, may be used either attributively or predicatively; there are also forms with the article (čirakaih *he, that one*, tərə'kal *she, that one*, RO). There are three degrees of demonstrative pronouns, which (probably very roughly) correspond to the Spanish éste, ése, aquel, respectively (I have not been able to ascertain the original distinctions). It seems clear that the shortest form refers to proximity to the speaker (cf. English *this*), the others to distance (cf. English *that*). The forms are as follows: či·, či *he, this, this one* (m); tə·, tə *she, it, this, this one* (n); čisa *he, that, that one* (Spanish ése, AO) (m); təsa *she, it, that, that one* (n); čira *he, that, that one* (Spanish aquel lejos, AO) (m); tərə *she, it, that, that one* (n).

Less common are čia (m; AI) and tia (n; AO). No plural forms have been recorded, nor seem to occur (cf. Celedon, op. cit., p. 23); a singular often expresses a plural idea, as in su·wala či piama *her two brothers*.

10.4. When used attributively, the demonstrative follows, e.g., aulaka etkači (= etkaih či) tamələĩ *this dog is mine* (AO), haraih wayu· wašič·ia (= wašir či ya) *who is this rich Indian?* (AO), mak·a tə· *this place*, pi·čka tə· *this house*, hama'a tə· ta'u·la or ta'u·la hama'a tə· *this hammock is mine* (AO). In the predicative construction, however, the demonstrative precedes, e.g., čira hintəik'aih *that is the boy* (RO).

Nevertheless, there are examples of these pronouns being used before a noun without particular stress to express an attributive relation, as it appears, in the same way as a definite article. The following may be quoted: širaku tərə wəĩkal *in the water* (RO), sa'ukolo tərə me·sakal *on the table* (RO). There is especially a construction with a preceding personal pronoun, as in nia čira to·la·'kaih *that man*, šia tərə hi·etkal *that woman*, šia tə· me·sakal *this table* (RO).

Like the personal pronoun, the demonstratives may be used as emphasizers of a preceding pronoun or pronominal prefix, e.g., na'u čira *to him*, sa'u tərə *to her*, ni·mač·ira *his lips, that one* (RO).

10.5. Interrogative pronouns. These are probably originally predicative (= *who is it?*, *what is it?* etc.) and always introduce the sentence. There are a great number of forms, some being used of persons, others of things, etc. The most important ones are (1) haraih *who?* and (2) kasa(wayu) *what?*

(1) The former, which is used of persons, is declinable and has the forms haraih (from harali; sing. m), harat (from haralu; sing. n), and harali (from haralina; plural, m and n), e.g., haraih nia *who is he?*, haraih čira *who is that man?*, haraih pirakaya *whom do you see?*, harat pia *who are you?* (said to a woman), harač·iã (from harat šia yã) *who is she?*, harali naya *who are they?* (RO). Related to this stem is he·ra, hera *how many?* (e.g., hera pu·yase· *how many* (*are*) *your years*, i.e., *how old are you?* TS) and he·ram·a *what more?*

(2) The latter is indeclinable, e.g., kasa *what is it?*, kasawayu tərə *what is that?*, kasawayu paĩraka *what are you doing?* (RO).

10.6. Of other forms the following may be mentioned: han·a, kasač·i, as well as the adverbial stems hama and hala-, all with a great number of variants and derivations.

(1) Han·a (cf. Celedon janá *quién*, op. cit., p. 23) is approximately equivalent to haraih, e.g., han·a kakum·ak·a *who did it?*, han·a kačauni·ka hia *whose daughters are you?* (literally, *who* (*is it*), *you are his* (*someone's*; see **7.13**) *daughters*; AO), han·a kakoroloka tə· *whose is this?*

(2) Of kasač·i (m) (approximately = *which?*, Spanish cuál) there are inflected forms kasač·ir (n) and kasač·iki (probably adverbial), e.g., kasač·ik pia or kasač·ik *how*

are you?, to which the answer is usually napots *nothing*, i.e., *all right* (cf. the Russian nitchevo).

(3) The following are all adverbial. Thus, for instance, hama (hã)[19] equals *how is?*, *what about?* or is a general interrogative word, e.g., hama *how are you?* (Spanish qué tal? RO), hama pie·rəĭ *what about your wife?* (RO), hama taya'kaih *what about me?* (Spanish a mí no?, y a mí?), hama pia *what about you?* (Spanish *qué hay de ti?*), hã či wane· *what about the other?* (y el otro? RO), hã nawane·kan *what about the others?* The following are declinable derivatives: hamas (n) kwaip(·a) *in what way?* (Spanish de qué manera?, cf. hukwaip·a *its form*, pukwaip·a *where are you going?*, nukwaip·a *where is he going?* RO), hamahači (m) *doing what?* or (Spanish) para qué? (RO). A variant is hamu (e.g., hamu kwaip·ala *how do you do it?*, cómo haces tú? RO), with the derivative hamus (cf. Celedon jamúse, op. cit., p. 100), e.g., hamus pə'kəhaĭ (sing), hamus hə'kəhaĭ (plural) *how* (*what*) *do* (*did*) *you say?* For the latter phrase one often uses (ha)mususõ, (ha)məsəsõ, haməsĭ, ha·məsõ (AO), etc. (cf. **3.6**).

(4) Of the stem hala-, declinable local adverbs (or verbs) are formed, namely halaši (sing. m and plural) and halas (sing. n), both meaning *where is?*, *where are?* e.g., halaši waya *where are we?*, halas te·rõya *where is my wife?* (RO). Further: halihe·ši *whence is?*, halapši *at what time of day?*, e.g., halapši suntaka *when does she come?* (AO); cf. halap·a kaihkaih *what time is it?*

10.7. An interrogative clause in Goajiro, whether containing an interrogative pronoun or not, generally has an interrogative particle (-ka, -ka'a, -ka'aka, -ka ka'aka or -ya·, -yã; cf. **22.2**) affixed to some important word, e.g., kasa paĭraka (sing.), kasa haĭraka (plural) *what are you doing?*, harayã *who is it?*, halašiã *where is he?* (RO), halasiã *where is it?*, halaši nawane·ya *where are the others?*, haraih kakorolokayã *whose is it?* (in which both particles are used together), kasa huput·e·tka wa'pula waya mahuk·anu *what will you leave for us who are poor?* (AO). See further the examples in the preceding paragraphs.

Another interrogative particle is če·, e.g., harali če· wayu·kana wašin·ukali·rua *who can the wealthy Indians be?* (AI).

10.8. The interrogative pronouns are also used in an indefinite sense, e.g., psa'a kasawai (= kasawayu) *bring* (*me*) something. Kasa probably is the same as kasah, which means *a thing* (maima kasah *many things*).

10.9. Other pronouns. The following should especially be mentioned: wane· (usually preceded by a demonstrative word or a prefix) *other*, *the other*, mušiaka, etc., *the same*, malaka *the same*, -pušua *all*, and -aulaka *some*.

(1) The common forms for *the other*, *the others* are (sing.) či wane (m), tə wane· (tuane·, tuane, tuan; n), and (plural) nawane·: tuane pinč *another house*, tuane wapuk·a *another way*, nawane· wayu·kana *other Indians*, nawanairua *others*; otherwise it is possible to say čisa wane *that other one* (RO), etc. It is evident that the Indians do not differentiate strictly between *one* and *another*.

(2) There are many related forms for *the same*, the most important ones being mušiaka· (m) and musiaka (n), used both in the singular and plural. The construction appears from: musiaka· *it is the same*, mušiaka taya wane *I am the same as the other* (FJ), katep·aši to layu·kania mušiaka našahaya hi·e·yu· *do the men paint* (*their face*) *the same as the women do?* (AO). The following forms are contractions or modifications of those mentioned: muška, muyak·a, məši·ka (m), muska, məsəkə (n), e.g., muska wane·ya *like the other*, məsəkə taya *the same as I*.

(3) Another word for *the same* is malaka

[19] Cf. Celedon jamá (op. cit., p. 100).

(maka), e.g., malaka (maka) tayakaih *like me* (TS), malaka taī punaī *I love you* (see **7.12** (2 a), Note 52).

(4) *All*, -pušua, is usually preceded by a personal prefix, e.g., wapušua *all of us* (RO), wat·ahe·waina napušua *all from afar* (RO), a'unahana napušua *they all went* (RO). There is a special plural form -pušua·le· (probably = -pusua·le·ya, cf. **7.9**), e.g., spušua·le· *you all* (RO), kasa hupušua·le· kasak·a *all things* (AO). Another word for *all, whole* is -pa'a, e.g., s(u)pa'a mak·al *the whole earth* (RO).

(5) Of -aulaka I have one example only: naulaka (nauluk; AO) *some* (plural).

THE POSITION OF APALACHEE IN THE MUSKOGEAN FAMILY

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1. Introduction
2. Reasons for placing Apalachee in the Eastern division
3. Reasons for placing Apalachee in the Alabaman subdivision
4. Additional Apalachee cognates
5. Resemblances to Choctaw
6. Conclusions

1. Apalachee is an extinct language of Florida. It has long been known to belong to the Muskogean family of languages, but, so far as I am aware, it has never been assigned to its proper position within the family on the basis of strict phonological considerations. In The Handbook of American Indians,[1] under the heading Apalachee, it is stated that these Indians "are linguistically more nearly related to the Choctaw than to the Creeks." In the same source, under the heading Muskogian, Apalachee is put in the same subgroup with Hitchiti, probably on the strength of Gatschet's opinion, viz., "The Hitchiti, Mikasuki, and Apalachi languages form a dialectric group distinct from Creek and the western dialects [by which he means Choctaw and Chickasaw], and the people speaking them must once have had a common origin."[2] Swanton, on the other hand, holds a different opinion, which he states in speaking of the Apalachicola, a town of the Creek Confederacy not to be confused with Apalachee: "In recent times Apalachicola has always been classed by the Creeks as a Hitchiti-speaking town, while the fragment of Apalachee that has come down to us shows that language to have been an independent dialect."[3]

Virtually all of the linguistic material on Apalachee that has been preserved is contained in "a letter in the Spanish and Apalachee languages" which "was written for transmission to King Charles II" and bears the date January 21, 1688.[4] Swanton kindly provided me with a copy of this letter a few years ago, but it is only recently that I have had the opportunity to study some of the forms and to draw some conclusions about the proper placing of Apalachee among its sister languages.

2. In 1941 I published a paper entitled The Classification of the Muskogean Languages[5] which gives the classification of the extant languages only. These are divided into two major divisions, the Western and the Eastern. The Western division contains only Choctaw and Chickasaw while the remaining languages all belong in the Eastern division. This latter division is, in turn, further divided into three subdivisions, viz., (1) Alabama-Koasati, (2) Hitchiti-Mikasuki, and (3) Creek-Seminole.

The first point to be investigated concerning Apalachee, then, is whether it belongs to the Western or Eastern division. The first statement quoted above from the Handbook might lead one to suppose that it belongs with Choctaw. But let us first look at the facts. Two of the major phono-

[1] BAE-B 30 (1907).

[2] Albert S. Gatschet. A Migration Legend of the Creek Indians, Vol. 1, p. 74, Phiadelphia, 1884.

[3] John R. Swanton. Early History of the Creek Indians, BAE-B 73. 130 (1922).

[4] Ibid., p. 120.

[5] In Language, Culture, and Personality, ed. by Leslie Spier, pp. 41–56, Menasha, Wisconsin, 1941. The article is hereinafter referred to simply as Classification.

logical considerations[6] that have led to the setting up of the Western and Eastern divisions are as follows:

I. PM (Proto-Muskogean) *N > Western n, Eastern ł, e.g. Choc., Chick. nani *fish*; Ala., Koas. łału; Hitch., Mik. ła·ł-i; Cr., Sem. łálu, all from PM *NANI/u.

II. PM *c > Western s, Eastern c, e.g. Choc. nusi *to sleep*; Ala., Koas. nuci; Hitch. nu·c-i·ki; Cr., Sem. nuc-íta, all from PM *nuci.

Evidence in Apalachee on both of these points places it in the Eastern division and NOT with Choctaw. The Apalachee evidence is as follows:

I. PM *N > Apal. ł.

PM *-nki *father* > Choc. -nki; Apal. -łki, in piłki *our father* (pilzqui);[7] Hitch. -łk-i; Cr., Sem. -łki. (The Ala., Koas. term -ta·ta is not cognate.)

II. PM *c > Apal. c.

First set of cognates: PM *p-hica *to see* > Choc. pisa; Apal. pica (picha); Ala., Koas. hica; Hitch. hic-i·ki; Cr., Sem. hic-íta. (The p- in Choc. pisa and Apal. pica is an old prefix preserved only in these two languages.)

Second set of cognates: PM *-hakcuk^{w} *ear* > Choc. haksub-iš; Apal. -hakcup, in pihakcup *our ears* (pihacchup); Ala., Koas. -hakcu (with loss of final consonant); Hitch., -hakcub-i; Cr., Sem. -hácku (with metathesis and loss of final consonant).

Further examples are lacking in the material that has been analyzed so far, but the evidence shown above appears to be conclusive.

3. We have now placed Apalachee in the Eastern division of the Muskogean family. The next problem is to place it in one of the subdivisions of the Eastern division or else give it status as a separate subdivision. The following points seem pertinent on this score:

(1) It seems unlikely that Apalachee belongs in either the Creek-Seminole or the Hitchiti-Mikasuki subdivisions because languages of these two subdivisions always suffix all personal pronominal elements used in the conjugation of active verbs.[8] In Apalachee, on the other hand, we find the form haskahu (hascaho) *we say* where the pronominal element has- *we*[9] is prefixed. Compare this with Koasati haska *you said* < has- *you* (pl.) + -ka ~ kaha to *say*. (Koasati has three main paradigmatic classes, one of which prefixes most of the pronominal elements.) This evidence makes it appear probable that Apalachee belongs in the Alabaman subdivision along with Alabama and Koasati. (Choctaw, too, prefixes certain pronominal elements used with active verbs, but it has already been shown that Apalachee does not belong with Choctaw; see §2 above).

(2) Another bit of evidence showing that Apalachee does not belong in the Creek-Seminole subdivision is found in the fact that

[6] In all I have discovered six major phonologi ca points separating the two divisions, viz., (1) PM *N > Western n, Eastern ł, (2) PM *c > Western s, Eastern c, (3) PM *s > Western š, Eastern s, (4) PM *š > Western š, Eastern c, (5) PM final *i/u > Western i, Eastern u, (6) PM final *i/a > Western i, Eastern a. See Classification, cited above, and my more recent article, The Development of Proto-Muskogean *k^{w}, IJAL 13. 135–137 (1947).

[7] Apalachee forms are quoted in a standardized writing that has been equated to the writing I employ in rendering the forms of the other Muskogean languages. In parentheses following the standardized writing I place the Spanish writing employed in the letter. In the form pilzqui note that lz = ł and qu (before i) = k. Other changes are c (not before i) = k, ch = c.

[8] See Haas, A Proto-Muskogean Paradigm, Lg. 22.326–32; Hitchiti and Creek paradigms are shown on p. 330.

[9] On the basis of comparison with other languages one would expect this element to mean *you* (pl.), but the related independent personal pronoun hasnu (hasnu) is also translated *we* in the Apalachee text. See point (5) in §3 for further discussion of this matter. Note that has- is used as subject of an active verb, whereas the related prefix haci- (hachi-) is used only as direct object or as a possessive.

PM *k^{w} > b in Apal.,[10] e.g. PM *abi *to kill*, *ihtibi *to fight* (< *to kill each other*) > Choc. abi *to kill*, itibi *to fight*; Apal. ihtibi (yhtibi) *to fight*; Ala. ibi *to kill*, ittibi *to fight*; Koas. ibi *to kill*; Hitch. itibi- (G)[11] *to fight*. The Creek-Seminole word is not cognate, but other evidence shows us that PM *k^{w} > k in Cr. -Sem., e.g. PM *k^{w}ihi *mulberry* > Choc. bihi, Koas. bihi-cuba *fig* (< *big-mulberry*), Hitch. bi-hasi (Sn)[12] *mulberry-month*, Cr. ki· *mulberry*. Hence if Apalachee were in the Creek-Seminole subdivision it would have to show k instead of the b it shows in the word ihtibi *to fight*.

(3) The Apalachee reciprocal prefix is usually written ihti- (ihti-, yhti-), as in ihtibi (yhtibi) *to fight*, ihtipicahin (yhtipichahin) *seeing each other*; occasionally it is written iti-(iti-, yti-), as in itihkapi (itihcapi, ytihcapi) *saying to each other*. Assuming that ihti- is correct, we find that the Apalachee form of this prefix is closer to Alabama-Koasati itti- (which shows gemination < earlier *ihti-) than it is to Hitchiti and Creek-Seminole iti-, both of which show ungemination < earlier *itti-. (Choctaw also has iti-, but it has already been shown that Apal. does not belong with Choc.)

(4) The Apalachee word for *to give* contains the intransitive or medio-passive suffix -ka, as in imakat (ymacat) *gave* < imaka *to give* + -t, verb suff. The Ala.-Koas. form of this word is iŋka *to give* (< earlier *imaka; ŋ regularly arises < m before k).[13] Hitch. also has iŋka- (G) *to give*, but Creek lacks the -ka suffix in the cognate form im-ita *to give*. (Choc. also lacks -ka in ima *to give*.)

(5) The Apalachee word hasnu (hasnu) *we*, independent personal pronoun, is something of a puzzle, since it is identical with the Ala.-Koas. word hasnu *you* (pl.). It is even more puzzling since it exists alongside of another word pihnu (pihnu) *we* which corresponds more nearly to the first person plural independent personal pronoun of the other Muskogean languages, viz., Choc. pišnu, Ala. pusnu, Koas. kusnu, Hitch. puhn-i, Cr. pu·mi. Moreover, the related Apalachee personal pronominal prefixes (used in showing direct object and possession) are pi- (pi-) *us, our*, corresponding to pihnu *we*, and haci- (hachi-) you, your (pl.), corresponding to hasnu *we*. If the translation *we* is correct for hasnu,[14] then we must assume some special semantic development for this word in Apalachee, which is not reflected in the other Muskogean languages and which is not paralleled in the personal pronominal prefixes in Apalachee itself. However, Apal. hasnu *we* is undoubtedly cognate with Ala.-Koas. hasnu *you* (pl.) and differs both from Hitch. cihni-ta·ki *you* (pl.) and from Cr.-Sem. ci·mi-ta·ki *you* (pl.). This would then appear to be another point in favor of the Ala.-Koas. connection of Apal.

The evidence given above, meager though it is, leads me to think that Apalachee probably belongs in the Alabaman subdivision. Point 1 above is the strongest evidence we have for this, but points 3 and 5 also lend some weight to the argument. Points 2 and 4 show us that Apal. does not belong with Creek, but leaves us in doubt as to whether it belongs with Ala.-Koas. or with Hitch.-Mik. However, if point 1 is

[10] See The Development of Proto-Muskogean *k^{w}, already cited.

[11] Hitchiti forms followed by capital G in parentheses are taken from Gatschet, Tchikilli's Kasi'hta Legend in the Creek and Hitchiti Languages, Transactions of the Academy of Science of St. Louis, Vol. V., pp. 33–239 (also separately numbered pp. 1–207), St. Louis, 1892. A Hitchiti glossary is to be found in pp. 163–211 (also separately numbered pp. 131–179).

[12] Hitchiti forms followed by the abbreviation Sn in parentheses are taken from John R. Swanton, A Sketch of the Hitchiti Language (unpublished ms.).

[13] The Apalachee evidence of a form imaka was not necessary in making the deduction that Ala.-Koas. iŋka developed from earlier *imaka.

[14] See footnote 9.

correct, a close connection with Hitch.-Mik. is thereby ruled out. Moreover, while vocabulary resemblances cannot be used as decisive evidence, they provide, I think, good supporting evidence; and the evidence on this score, too, points to an Ala.-Koas. connection rather than to a connection with Hitch.-Mik. (see **4** below).

It should also be pointed out that it is possible that Apalachee was closer to Alabama proper than to Koasati, but since I lack extensive materials on Alabama, this point cannot be settled definitely in the present paper. Only a small part of the Apalachee material contained in the letter that has been preserved to us has been analyzed. If, as I suspect, it is rather close to Alabama, it should be possible to do more with the Apalachee material when more Alabama material has become available.

4. In this section I shall present a few additional Apalac hee cognates gleaned from the material that has so far been analyzed. These are as follows:

(1) PM *api·la to help > Apal. -pila < *apila (?)[15] in hacipilat (hachipilat) *will aid you* (< haci- *you* (pl.), personal pron. pref. used as object, + -pila + -t, verb suff.); Ala. im-api·la *to help*.

(2) PM *čuba *big, large, great* > Apal. cuba (chuba); Ala., Koas. cuba; Hitch. cu·b-i. (The Choc. čitu and Cr. łákk-i· *big* are not cognate.)

(3) PM *haknip *body*, *nipi/u *flesh, meat* > Choc. haknip *body*, nipi *meat*; Apal. -nip *body* in apinip (apinip) *our bodies*; Ala., Koas. nipu *meat*; Hitch. akn-i *body*. (Creek is not cognate.)

(4) PM *iksa *clan* > Choc. iksa (B);[16] Apal. -iksa in iniksa (ynycsa) *his clan*; Koas. -iksa *clan*, ayiksa *his clan*. (Hitch. and Cr. not cognate.)

(5) PM *ayukpa *happy, contented* > Choc. yukpa; Apal. ayukpa in ayukpat (aiocpat) *are contented*; Ala., Koas. ayukpa. (Hitch. and Cr. not cognate.) Note that Apal. agrees with Ala.-Koas. in retaining the initial a-vowel which is lost in Choc.

(6) PM *nihtak *day* > Choc. nitak (B) (< earlier *nittak with ungemination; *nittak in turn is < *nihtak, the PM form); Apal. nihtaka (nihtaga; also nihtoga, prob. a misprint) *days*;[17] Ala.-Koas. nihta (with loss of final k); Hitch. nihtak-i (with final k preserved before the Hitch. noun-suff. -i); Cr., Sem. nitta· (geminated < earlier *nihta·; is the final long a· to be interpreted as a lengthening as the result of the lost final k?)

(7) PM *k^{w} anna *to want, wish* > Choc. banna, Apal. -bana in inbana (inbana) *his wish*;[18] Ala., Koas. banna *to want*. (Hitch. and Cr. not cognate.)

(8) PM *ak^{w}i ~ *aku ~ *uki *water*[19] > Choc. uka (metathesized < *aku); Apal.

[15] Long vowels are not written in the Apalachee text; perhaps this is to be read -pi·la < api·la (?)

[16] Choctaw forms followed by capital B in parentheses are taken from Byington, A Dictionary of the Choctaw Language, BAE-B 46 (1915).

[17] It is not known whether the Apal. nihtaka *days* is a special plural form or a generalized form which could be used in the singular or the plural. If the former is the case the stem was probably nihtak-; if the latter is the correct interpretation the stem is nihtaka.

[18] It is not known whether the Spanish failed to write a geminate cluster in inbana (in which case the stem would be -banna, as in Ala.-Koas.) or whether Apal. has ungeminated certain geminate clusters. Ungemination occurs rather commonly in Hitchiti, but it also occurs sporadically in other Muskogean languages. Modern Hitchiti lacks a cognate for this stem.

[19] The variant PM reconstructions for this word are all necessary to explain the development of the word in all the Muskogean languages. The form *ak^{w}i develops to *aku through labialization of i to u with subsequent delabialization of k^{w}; it develops to *uki through labialization of the initial vowel a to u with subsequent delabialization of k^{w}. But *aku is necessary for the Choctaw development, while *uki is necessary for the development of the Ala.-Koas, Hitch., and Cr.-Sem. forms. The two forms *aku and *uki cannot be equated except by assuming an earlier *ak^{w}i; this earlier reconstruction is also substantiated by comparison with more distant languages, as will be shown in a later paper.

uk-[20] in uk-cikiti (oc chiquiti) *water-port*; Ala.-Koas. uki; Hitch. uk-i; Cr.-Sem. úy-wa (-wa is a common noun suff. in Cr.; uy- is < *uki with loss of k and subsequent change of i to y).

(9) PM *kustini *wise*; *tame* > Choc. kustini (B) wise, tame; Apal. kustini- in kustinika-min san (gustinica-min san) *some wise*; Ala. kustini *sober*, Koas. kustini *tame*. Cf. also Ala., Koas. akustinni·ci *to remember*.

(10) PM *mał- *to be scared, frightened* > Choc. mał- in mał-al-li *to scare; to be scared*; Apal. mał- in kumałtacihi (cumalztachihi) *not fearing*; Ala. mał-at-li *wild* (< *scared*), Koas. mał-at-li *to get scared*; Hitch. mał- (G) *to be afraid, frightened*.

(11) PM *in-/C, *im-/V *to him, her, it; for him, her, it* > Choc. in- before dental C, im- before V and labial C, iⁿ- otherwise; Apal. in-/C, im-/V; Ala. Koas. in- before dental C, im- before V and labial C (with other assimilations before other consonants); Hitch. in- before dental C, im- before V and labial C (with other changes before other consonants); Cr., Sem. in- before non-labial C, im- before V and labial C (with other assimilations in various subdialects).

(12) PM *hačin-/C, *hačim-/V *to you* (pl.), *for you* (pl.) > Choc. hačin-, hačim-; Apal. hacin- (hachin-); Ala.-Koas. hacin-, hacim-. (Hitch. and Cr. not cognate.) (The assimilations for this prefix are the same as for cognate 11 above.)

(13) PM *-či- ~ -ič-, causative suff. > Choc. -či; Apal. -ci (-chi) in fihlacit (fihlachit) *made good*; Ala.-Koas. -ci; Hitch. -ci; Cr.-Sem. -ic- ~ -yc-.

(14) PM *ik-..-u ~ *-iku *not* > Choc. ik-..-u (as in iklawu (B) *to lack*; cf. lawa *to be many*); Apal. i-..-uki (?), as in nuk-ifihluki (noc-yfihluki) *things not good*, cf. nuk-fihla (noc-fihla) *things good*; Koas. -ik-.. -u, as in ayukikpu *not happy* (cf. ayukpa *happy*); Cr., Sem. -iku·, as in nuĺíku· *not cooked* (cf. núli· *cooked*).

[20] The Apal. word for *water* occurs only in the compound uk-cikiti *water-port*; perhaps the independent form of the word was *uki, as in Ala.-Koas.

Note that in the cognates given above the Apalachee form is generally closer to the Ala.-Koas. form (when the forms in the various subdivisions show differences) than it is to the other forms. An exception is seen in (6) where Apal. appears to be closer to the Hitch. form in retaining the final k of the PM form. However, Ala. and Koas. have lost all stem-final consonants, and this may have been a fairly recent change.

It should also be noted that in cognates (4), (5), (7), and (12) Hitchiti and Creek forms are not cognate where Ala.-Koas. forms are. This greater degree of vocabulary resemblance between Apalachee and Ala.-Koas. is also probably significant.

5. Apalachee bears a few special resemblances to Choctaw which merit special attention. One of the most interesting of these is the retention of an old prefix p- in the word *to see*, viz. Choc. pisa, Apal. pica (picha) as against Ala., Koas. hica, Hitch. hic-i·-ki, Cr.-Sem. hic-íta.[21] However, as has already been shown (§2), the fact that in this set of cognates PM *c > Choc. s, Apal. c shows us clearly that Apal. belongs with the languages of the Eastern division rather than with Choctaw.

Another interesting resemblance between Apal. and Choc. is seen in the first person plural pronominal prefix (used as direct object and as possessive). The Choc. form is pi- and is, strictly speaking a dual form, the plural form being hapi-. The Apal. form is likewise pi-, but is evidently a true plural. Corresponding forms in the other Muskogean languages always show an u-vowel rather than an i-vowel, viz. Ala., Hitch., Cr. pu- *us, our* (pl.), and the Koas. form ku- is even more divergent. The corresponding indirective form meaning *to us, for us* is likewise pin-, pim- in both Choc. and Apal.,[22] whereas again the other languages have an

[21] This and other sporadically occurring prefixes are discussed in Classification, p. 54.

[22] The various assimilations for these forms are the same as those given for in-, im- (cognate 11 in §4).

u-vowel, viz., Ala., Hitch., Cr. pun-, pum-, and again the Koas. form kun-, kum- is divergent.

In the group of cognates given in §4 above, Apal. often shows vocabularly resemblances to Choctaw (see 3, 4, 5, 6, 7, 9, 10, 11, 12, and 13), but in all these cases it also resembles Ala. or Koas. or both, sometimes even more closely than it resembles Choc. (see 5). There are also a few other vocabulary resemblances to Choc. which may be listed here:

Apal. huluci *to love* in hulucit (huluchit) *loving*; Choc. hulitubli (B) *to love*.

Apal. finha (finha) *much*; Choc. fihna *much* (with metathesis in one or the other language).

Apal. im-abaci *to teach* in imabacit (imabachit) *teaching*; Choc. im-abači *to teach him*.

Apal. anukfili *to think* in anukfilit (anocfilit) *thinking*; Choc. anukfilli (B) *to think*.

Apal. anukfilika (anocfilica) *thought* (the noun); Choc. anukfila (B) *thought*. But note that the Apal. form has the suffix -ka, a common suffix in the languages of the Eastern division which is equivalent to the Choc. suffix -a.

When more material is available to me on Alabama, perhaps some of these resemblances will also recur there. As I have already shown in another paper,[23] although Alabama and Koasati belong in the same subdivision of the Eastern division while Choctaw belongs in the Western division, still, in many cases of lexical dissimilarity between Alabama and Koasati, we find that Alabama agrees with Choctaw whereas Koasati agrees with Creek and sometimes with Hitchiti. If this is true of Alabama, it may also be true of Apalachee.

6. On the basis of phonological criteria (§2) we have been able to show that Apalachee belongs in the Eastern division of the Muskogean family. Moreover, it probably belongs in the Alabaman subdivision of the Eastern division (§3 and §4) . Gatschet's theory that it belongs in the Hitchiti subdivision would seem to be ruled out on the basis of its manner of conjugating active verbs (§3) and its greater vocabulary resemblance to Ala.-Koas. (§4). There are a number of very clear-cut criteria which could be used to prove this point one way or the other (in addition to the point about the manner of conjugating active verbs), but I have not yet discovered any Apalachee cognates that come under these criteria. Briefly stated these criteria are as follows:[24]

(1) Hitchiti retains -Vk- before a liquid or nasal whereas in Ala., Koas., Cr., and Sem. -Vk- > -V·- in these circumstances, e.g. PM *lakna *yellow* > Hitch. lakn-i, Choc. lakna, Ala., Koas. la·na, Cr., Sem. lá·n-i·. No Apal. cognates coming in this category have been discovered.

(2) Hitchiti stems lengthen the vowel of an initial open syllable, e.g. PM *kuni/u *skunk* > Hitch. ku·n-i, Choc. kuni, Ala., Koas. kunu, Cr., Sem. kúnu. Long vowels are not indicated in the Apalachee forms that have come down to us.

(3) Hitchiti frequently ungeminates the geminate clusters of other Eastern division languages, e.g. Hitch. cis-i *rat*, Ala., Koas. cissi *mouse*, Cr., Sem. císsi *rat*. We cannot be sure that geminate consonant clusters were always written in the Apalachee forms that have come down to us. The Apal. word -bana *wish* corresponds to Ala., Koas. banna, but the Apal. form may be incorrectly written for *-banna. Moreover, the Hitch. word is not cognate so we do not know definitely that Hitch. would show ungemination here. Note also that the Apal. form of the reciprocal prefix is ihti- and that this shows gemination in Ala., Koas. itti (< earlier *ihti-), whereas Hitch. shows ungemination in iti-.

(4) Hitchiti adjectives frequently form their plurals by means of an infixed -hu·-, e.g. packi *long* (s.), pachu·ki (pl.), whereas Koas. and Choc. (probably also Ala.) form adjective plurals by prefixing hu-, e.g.

[23] See Classification, p. 46.

[24] See Classification, pp. 48–49.

Koas. łimihku *smooth* (s.), hułimihku (pl.). No special plural forms of adjectives have been discovered in the Apal. material that has come down to us.

Therefore lacking any test cases under the criteria given above, I prefer to let the matter stand as already stated, namely, that Apalachee appears to belong in the Alabaman rather than in the Hitchiti subdivision.

In my paper on Classification[25] I have given a chart which summarizes the classification of the Muskogean languages. A revision of this chart, amended so as to include Apalachee, is given below:

A. Western division
   Old Choctaw
   New Choctaw subdialects, including Chickasaw
B. Eastern division
   1. Old Alabama
      a. Apalachee (extinct)
      b. New Alabama
      c. Koasati
   2. Old Hitchiti
      New Hitchiti, including its subdialect Mikasuki
   3. Old Creek
      New Creek subdialects, including Seminole

It should be noted that the Alabaman subdivision contains three separate languages, Apalachee, Alabama, and Koasati, whereas the other subdivisions contain only slightly variant dialects of one language.

[25] See Classification, pp. 54–55.

INDIAN STREAM-NAMES IN GEORGIA

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It is my intention to comment as tersely as possible upon the origin and meaning of certain Indian stream-names in Georgia. I shall not consider all the Indian names that have survived in this state; or, on the other hand, more than a small number of those that presumably have fallen into disuse. Nor shall I reproduce the sources that lie concealed under the cloak of literal translations, such as *Beaver Dam*, *Big Potato*, *Pumpkin Vine*, *Talking Rock*, and *Yellow-jacket*. In order to conserve space still further, I shall not repeat here—with possibly one or two exceptions—names that have been analyzed in Hodge's Handbook of American Indians, Mooney's Myths of the Cherokee, and Swanton's Creek Social Organization and Usages.

My list of names will include at least one striking illustration of folk etymology: Centralhatchee.

The original Indian place-names are derived in Georgia mainly from three languages—Hitchiti, Cherokee, and Creek. The Hitchiti names are found as a rule in the southwest; the Cherokee are confined to the north; the Creek appear virtually in every part of the state. Moreover, as the Creeks held the northern area of Georgia before they were driven out by the Cherokee, it is not surprising to encounter Creek loanwords in Cherokee.

Some streams owe their names to languages other than those which I have mentioned. Such, for example, are Alapaha, a Creek adaptation of Timucua Arapaha, *bear lodge*; Apalachee, probably from Choctaw apelachi, *allies*; Aucilla, a river name of unknown signification, identical with that of an ancient Timucua town; Tugaloo, perhaps a Cherokee alteration of Chickasaw tokolo, *two*, a term referring to a stream with two branches; Uchee, a variant of Yuchi (cf. Hodge); and Wassaw, synonymous with Waxhaw, a Siouan name that cannot be translated.[1]

ALCASALICA. An affluent of the Ocmulgee River in Telfair County. 1823 Tanner Map of Georgia and Alabama: Alcasalica Cr. This name refers to a creek near which earthen pots were used, the source being Creek ȧl̨kȧswȧ *pots* and laiki *place*. The name seems to be obsolete. The signification of Alcasalica is similar to that of Tchoutacabouffa, the name of a river tributary to Biloxi Bay, in Harrison County, Mississippi. Tchoutacabouffa means *where there are broken pots* from Choctaw shuti (*earthen*) *pots a*, *there*, and kobafa *broken*.

ALCOVY. A river, tributary to the Ocmulgee in Jasper County. 1818 The Eleazer Early Map of Georgia: Ulco-fau-hatchee. 1849 George White Statistics of the State of Georgia (Savannah) 39: Alcovee or Ulcofauhachee river. Alcovy is derived from Creek o|ko *pawpaws* and -ofa *among*—hence *a river among pawpaw trees*. Two of the obsolete spellings end in the equivalent of Creek hȧchi *river*.

ALLONAHACHEE. A Creek in Stewart County. Source: Creek ȧlunaha *wild potato* and hȧchi *creek*. The edible tubers of several species of swamp potato (Sagittaria) were highly prized by the Indians.

[1] For data on the location of various watercourses, I am indebted especially to Gertrude Harper, Coleman; Kate Harris, Leesburg; Helen E. Terrill, Lumpkin; J. C. Griffin, Georgetown; M. J. Guyton, Dublin; and J. H. Mahone, Talbotton.

My thanks are also due to John P. Brown for the privilege of quoting from his Old Frontiers... (Southern Publishers, Inc., Kingsport, Tennessee, 1938); and to Rand, McNally & Company for permission to cite the Official Map of Georgia (Chicago, 1895, etc.).

ALTAMAHA. A long river of southeastern Georgia, flowing into the Atlantic through several channels, one of which is called Altamaha Sound. William Bartram, in his well-known Travels (Philadelphia, 1791), invariably spells the name Alatamaha. It is to this river that Goldsmith refers in The Deserted Village (1770):

"Through torrid tracts with fainting steps they go,
Where wild Altama murmurs to their woe."

The signification of this name is obscure. Perhaps the last two syllables may be intended for a Creek alteration of Timucua paha *house* or *lodge*. Biedma mentions the province of Altapaha, through which De Soto passed in 1540. Ranjel relates that in April of the same year De Soto set up a cross in the province of Altamaha, a name apparently surviving in that of the river in Georgia. I suggest, then, that the first element in Creek Altamaha is an adaptation of Timucua holahta *chief*; and that the second element is identical in meaning withTimucua paha. If this surmise is correct, the name means *chief's lodge*.

ARMUCHEE. A stream crossing the line between Walker and Chattooga counties. 1849 White Statistics 172: Amuchee. November 1937 Topographic Map: Armuchee Cr. Source: Perhaps Cherokee amuchi *hominy*.[2]

AUCHUMPKEE. A creek tributary to Flint river in Crawford county. The name of this stream has been corrupted locally to Oak Chunk. Source: Creek ochi *hickory trees* and hàmkà *all about*. Not far from the creek there is a village named Hickory Grove.

CANOOCHEE. I. A river in the southeastern part of the state, uniting with the Ogeechee in Bryan county. 2. A creek of the same name, according to the Topographic Map November 1937. This name seems to have descended from that of a country or province which Vandera transcribes as Canosi. Albert S. Gatschet identifies Canosi with Creek Ikanodshi, which he renders freely by *Graves are there*.[3] In Creek the expressive term for the dead is ikàn odjàlgi *land owners*.[4]

CEMOCHECHOBEE. A creek entering the Chattahoochee river north of Fort Gaines in Clay county. 1818 Early Map of Georgia: Sum-mo-che-cho-ba. Source: Hitchiti samochi *sand* and chobi *big*—Big Sandy Creek. I am indebted to John R. Swanton for the analysis of this name.

CENTRALHATCHEE. See Sundalhatchee, infra.

COLAPARCHEE. A creek in Bibb County. Bernard Piper, of Bass Road, Macon, Ga., is my authority for the spelling of this name. 1849 White Statistics 108: Coleparchee. Source: Creek kàlàpi *white oak tree* and hàchi *creek*.

COLEOTCHEE. A creek tributary to Big Lazer creek in Talbot county. The name was furnished by M. L. Callier, postmaster at Talbotton. Source: Creek kàlà *white oak* (Quercus alba L.) and hàchi *creek*.

COOLEEWAHEE. A creek uniting with Flint river at Newton, Baker county. 1849 White Statistics 120: Cooleewahee. This name seems to be a derivative of Creek kàlà *white oak acorns* and àwahità *scatter themselves*.

ECHECONNEE. A creek tributary to the Ocmulgee on the western boundary of Bibb county. Adiel Sherwood writes, "Icho-connaugh, the name of a creek, signifies deer trap."[5] The name is from Creek icho *deer* and kunhi *trap*. The Indians bent down small trees so as to form traps for deer. See *deer trap*, DAE II. 740.

[2] For this Cherokee word, see John P. Brown, Old Frontiers p. 534 (Kingport, Tennessee, 1938), a volume cited by permission of the author.

[3] A Migration Legend of the Creek Indians I.63 (Philadelphia 1884).

[4] Cf. John R. Swanton, Creek Social Organization and Usages, BAE-R 42.651 (1928).

[5] Gazetteer of the State of Georgia 3.159 (Washington, 1837).

FUSHACHEE. A creek in the southeast corner of Lot No. 60 of the 21st land district of Stewart county. Fushachee signifies *bird creek* from Creek fus- *bird* and hàchi *creek*. Creek fuswa *bird* generally appears as fus- in compounds. Benjamin Hawkins translates Foosce-hat-che incorrectly by *bird tail*.[6] Adiel Sherwood, Gazetteer 159, is likewise wrong in deriving the name from Creek foo-so-wan *bird* and hatchee *cock*. The Creek term for a cock is totolosi *chicken* and hunànwà *male*.

HANNAHATCHEE. An affluent of the Chattahoochee in Stewart county. The name of this creek has been corrupted from Creek àchinà *cedar* and hàchi *creek*.

HILOKA. A creek in Lee county. Hiloka may represent Creek hilukwà, a form shortened from hilukwàpi *sweet gum tree*.

HODCHODKEE. A creek in Stewart and Quitman counties, tributary to Pataula creek. Hodchodkee means *little home* from Creek hoti or huti *home* and chutki *little*.

HOLANNA. A tributary of Pataula creek in the southwest. Holanna probably means *Yellow Potato* creek, from Creek aha *potatoes* and lani *yellow*. Perhaps, however, the source is Hitchiti o|ani *reed*.

ICHAWAYNOCHAWAY. A creek joining Flint river in Baker county. 1849 White op. cit. 120: Ichawaynochaway. This unique name seems to be a distortion of Creek icho *deer* and nochita or nuchita *sleep*—that is, a creek near which deer sleep.

IFCONJO. A creek in Monroe county, tributary to Ocmulgee river. 1818 Early Map: If-con-jo-hatchee. 1823 Tanner Map: Ifconjo Cr. This name is derived from Creek ifkàncho *tick* probably the cattle tick (Margaropus annulatus) of the Southern States. The Early Map shows -hatchee, from Creek hàchi *creek*. Ifconjo may be obsolete.

KINCHAFOONEE. A creek in the southwest, uniting with Flint river at Albany, Dougherty county. 1798–99 Hawkins Sketch 65: Kit-cho-foon-e. 1849 White op. cit. 525: Kinchafoonee. This name has been altered from Creek kicho *mortar* and funi *nutshells*; that is, a contrivance for cracking nutshells. Funi is also the usual word for a bone.

KIOKEE. 1. An affluent of Chickasawhatchee creek in Dougherty county. 2. A creek in Columbia county. In this county there is also a creek named Little Kiokee. Source: Creek ki *mulberry* and oki *water*. The common word for *water* in Creek is wiwa or wi-. Oki is apparently a loan from Hitchiti.

LANNAHASSEE. A small creek near Preston in Webster county. Source: Perhaps Creek wi- *water* lani *yellow* and (a)hassi *old—Old Yellow Water*. As there are no mountains in this county, the name cannot be rendered by *Old Mountain*—in Creek |àni hassi.

LOCHOCHEE. An affluent of Kinchafoonee creek in Terrell county. This name means *Little Turtle*—from Creek locha *turtle* and the diminutive suffix -ochi. Bear Creek, an old alternative name recorded by White, Statistics 521–22, would appear in Creek as Nokosi Hàchi.

NOTTELY. A river in Union county. Naduhli, the name of an old Cherokee settlement, is said to be of unknown meaning; it cannot be from nahtuhli *spicewood* according to Mooney, Myths 526. The whites know the name as Nottely. John P. Brown, as I see now, derives the variant Notally from Cherokee Inadula-i *Going Snake Place*. Going Snake was the name of a Cherokee prominent at the time of the removal, 1838.[7]

OCETAHNEE. A creek in Randolph county. 1849 White op. cit. 493: Ocetahnee. This name, apparently obsolete, may have been corrupted from Creek osa *pokeberry* (Phytolacca) and tàkani *blistered*. The first element, however, in the name may reflect Creek àsi *yaupon* (Ilex cassine L.).

[6] A Sketch of the Creek Country in 1798–9, p. 52 (Georgia Hist. Soc. Colls., Vol. III, Savannah, 1848).

[7] See Brown, Old Frontiers, p. 533, 539.

OCHILLEE. A creek in Chattahoochee county, recorded on the Columbus Quadrangle, November, 1908. The name means *dead hickory*—from Creek ochi *hickory* and ili *dead*.

OCHLOCKONEE. A river in southern Georgia and northern Florida. 1837 Sherwood Gazetteer 210: "Och-loch-onne River rises in Irwin. . . . The Indians pronounce the word as if it had but three syllables." The name means *yellow water*—from Hitchiti oki *water* and lakni *yellow*.

OCHWALKEE. A creek in Laurens and Wheeler counties, tributary to the Oconee. 1823 Tanner Map: Okewalkee. Ochwalkee is the equivalent of *dirty water* the source being Creek oki *water* and holwaki *dirty*.

OCKLAU. A creek in Pulaski county. 1823 Tanner Map: Ocklau Cr. Ocklau is probably from Creek aklowahi *muddy*. Bernard Romans writes Ocklaw-wawhaw, evidently for aklowahi.[8]

OKAPILCO. A creek tributary to the Withlacoochee river in Brooks county. 1898 Rand, McNally Official Map of Georgia: Okapilco Cr. I am inclined to derive this name from Creek oki *water* and pilḷako, a contraction of opilwà *swamp* and ḷako *big—Big Swamp Water*. A less likely source is Creek okpiḷkà, "*nighthawk*" (Chordeilidae).

OSAHATCHEE. An affluent of Mulberry creek in Harris county. November 1937 Topographic Map: Osahatchee Cr. The first element in this name is from Creek osa *pokeberry*; the second is from Creek hàchi *creek*. There are no yaupon trees near this stream; hence the first element cannot be connected with Creek àsi *yaupon leaves*.

PACHITLA. A creek in Randolph and Calhoun counties. 1849 White Statistics 493: Pachitla. The name seems to mean *dead pigeon* from Creek pàchi *pigeon* and ilità *dead*. The second element, however, may have been altered from Creek tàlwa *town* and then the translation would be *pigeon town*. The reference is to the passenger pigeon.

PENNAHATCHEE. A creek in Dooly county. 1898 Rand, McNally Official Map of Georgia: Pennahatchee Cr. November 1937 Topographic Map: Pennahatchee Cr. Source: Creek pinwà *turkey* and hàchi *creek*.

PHINHOLLOWAY. A river and a swamp in Wayne county. 1818 Early Map: Fin-hol-loway. 1823 Tanner Map: Finholoway R. 1849 White op. cit. 604: "The Finholloway flows into the Alatamaha." 1898 Rand, McNally Official Map of Georgia: Finholloway River. In 1832 there was a Lower Creek settlement called Finhalui, probably in Wayne county. Cf. Swanton, BAE, Bull. 73. 284. Phinholloway, the current equivalent of Finhalui, signifies *High Foot Log*, the etymon being Creek fin- *foot log* plus hàlwi *high*. fin- is an abbreviation of finà.

Sherwood, in his Gazetteer 159, writes the name Pinholloway, and offers the following explanation of its origin: "An Indian shot a turkey on a high tree by its bank: holloway *high up* and Pinaway *a turkey*." The Topographic Map of November, 1937, shows a Penholoway creek; and certain Reports of the United States Geographic Board authorize the same spelling. Nevertheless, I am convinced that the form with initial Pin or Pen, which points to Creek pinwà *turkey*, may be ascribed to lack of familiarity with the existence of the old Indian town of Finhalui.

William Bartram, in his delightful Travels, applies the term *raccoon bridge* to a foot log across a stream. Nowadays, at least in Louisiana, a foot log is known as a *trappers' crossing*.

It may be appropriate to add that there is in Talbot county, Florida, a river named Fenholloway with the signification *high foot log*.

PISCOLA. A tributary of Withlacoochee river in Brooks county. 1849 White op. cit., 385: Piscola. The name of this creek is probably derived from Creek pisi *milk* and

[8] A Concise Natural History of East and West Florida I.278 (New York, 1775).

kàlà *white oak acorns*. Indian tribes of the Southeast extracted oil from various kinds of nuts.

SAVANNAH. A river forming, with the Tugaloo and Chattooga, the boundary between Georgia and South Carolina. Some scholars connect Savannah with Spanish sabána, a term designating a lowland meadow or a treeless plain. Sabána, the source of English savanna, is derived from Arawak of Haiti and the mainland. The evidence, however, in favor of a different origin for *Savannah* seems to me to be conclusive. The river, in other words, owes its name to the fact that the Shawnee once lived in its vicinity.[9]

SOCOHACHEE. A creek in Randolph county. 1849 White op. cit. 493: Socohachee. Source: Creek sukha *hog* and hàchi *creek*.

SOWHATCHEE. A tributary of the Chattahoochee in Early county. 1849 White ibid. 218: Sowahachee. November 1937 Topographic Map: Sowhatchee Cr. Source: Hitchiti sawi *raccoon* and hàhchi *creek*.

SUNDALHATCHEE. A creek now called Centralhatchee in Heard county. 1849 White ibid. 321: Sundalhatchee. Sundalhatchee may have been altered from Creek sàndàlàkwà, *perch* (a fish) and hàchi *creek*. Folk etymology must be responsible for the change of Sundal to Central.

TALAPAGEE. A stream, usually called Rum creek, in Stewart county. Source: Creek talàpi *corncob* and the diminutive suffix -dʒi—hence *Little Corncob* creek. The name Talapagee was furnished by Miss Helen E. Terrill.

TOBENANEE. A creek joining the Chattahoochee near Georgetown in Quitman county. 1849 White op. cit. 493: Tobenanee. One of my correspondents spells the name Tobannee. The name Tobenanee probably refers to a stream signalized by a tree with a crooked trunk, the source being Creek ito *tree* àpi *trunk* and yànahi *crooked*. If Tobenanee designates a grove, the name should properly end in the equivalent of the Creek collective suffix -àlgi; and in that case the translation would be *timber running in a zigzag manner*. The Early map (1818), for example, gives Itto-po-nau-ulgau as the name of a western affluent of Flint river, approximately in south-central Georgia; the Tanner map (1823) records the name as Ittoponanulgau.

TOBESOFKEE. A creek in Monroe and Bibb counties. Ca. 1770 Purcell Map: Lt. Tobasaughkee. 1898 Rand, McNally Official Map of Georgia: Tobesofkee. Tobesofkee means *sofky stirrer*—from Creek àtapà *stirrer* probably a wooden ladle; and safki *corn gruel*. For sofky, sofkey, see the *DAE*. Sherwood, *Gazetteer* 159, connects the name with a spurious Creek verb tobe *I have lost* and sofskee(sic) *my sofskee*. Henry Gannett records a somewhat similar translation.[10]

TOWALIGA. River and falls in Monroe county. In all probability this name means *sumac place* from Creek tàwa *sumac* and laigi *place*. Sherwood, Gazatteer 159, writes the name Towelaggie or Tow-elaggie, with the translation *roasted scalps*. Gannett interprets the name in the same way, op. cit. 303. But if Towa reproduces tiwa, one of the Creek names for *scalp*, then Towaliga can mean nothing but *place of scalps*. I consider this translation highly dubious. Little Towaliga river flows from Lamar county, and joins the Towaliga in Monroe county.

ULCOHACHEE. A creek tributary to Flint river in Crawford county. 1818 Early map: Ole-co. 1849 White op. cit. 197: Ulcohachee. Hawkins, Sketch 49, mentions a different stream, Ul-kau-hat-che, situated above the ancient town of Okfuskee in the present Tallapoosa county, Alabama. The names of the two streams are derived from the same source: Creek oɬko *pawpaw* (Asimina triloba Dun.) and hàchi *creek*.

[9] On Shawnee consult Hodge, Handbook II.530 ff.

[10] The Origin of Certain Place Names in the United States p. 301 (Washington, 1905).

REVIEWS

REPLY TO HOCKETT[1]

1.1. The major point which I have extracted from Hockett's critique relates to the reality or non-reality of linguistic data. This seems expandable to cover data or phenomena in general; it is illustrated in the following excerpt: "For the scientist, then, 'linguistic structure' refers to something existing quite independently of the activities of the analyst: a language is what it is, it has the structure it has, whether studied and analyzed by a linguist or not." It may now be assumed that: if science is not statements it is reality & V. V., or: if science does not state it describes & V. V., and: both statements and reality as constituting science need to be defined in terms of phenomenological-ontological factors.[2]

1.2. The equation: science = statements may be set up in order to preserve a distinction between metaphysical definitions (e.g. definitions of or in terms of being, reality, mentality) and other definitions which may rest on postulated resolutions (or acknowledgments) of metaphysical problems. The apparatus of the scientist (including data, techniques, units, relationships, purposes) may be accepted and stated on the basis of pragmatic postulations which neither accept nor reject reality. If it is to be referred instead to an absolute reality, then metaphysical definitions are implied. Hockett's statement (**1.1**) that "... a language is what it is ..." would seem to suggest that a particular problem of being:existence is presented as solved. Inversely, the "stator" may base his activities on the suggestion that similar problems are not solved. Or, if there is a solution, it may be taken as irrelevant to the activities of the "stator".

1.3 Definitions presented in terms of a subjective:objective opposition would seem to presume the validity of metaphysical discussion in application to the thing defined. Hockett rejects this validity for linguistic definitions when he says: "What does need to be avoided is useless argument as to whether linguistic structure is 'objective' or 'subjective', or the like ..."

1.4 Linguistic data may be referred to a generalized physiological source. Hockett says: "The child's 'analysis' consists, on the other hand, of a mass of varying synaptic potentials in his central nervous system."[3] Contradistinctively, language data may be defined as simply the product of informant techniques. Informants may be expected to provide a wide variety of testimonies, depending on the questions they are asked. These testimonies may be taken as indications of certain physiological changes in the informants. But the reality or non-reality of the changes does not compel definition in terms of them. Without the restriction imposed by a reality absolutism, data may be observed, accepted, rejected, subdivided, analyzed according to whatever principles the analyst may set.[4]

[1] Charles F. Hockett, A Note on 'Structure', IJAL 14.269–71 (1948).

[2] As e.g. when institutes are propounded thus: tentative acceptance of sensory evidence insofar as it yields a dichotomy consisting of coexisting: field 1. = confrontation of basic antinomies, e.g. is:not; I:you; real:ideal; and field 2. = acceptance of sensory evidence (+ analogic processes of whatever sort) as a basis for action, operation, existing, in a world, environment, setting. Reality arrived at according to these terms becomes a feature of "pure thought", impossible as a concomitant of active existence in an active world.

[3] See N. H. Pronko, Language and Psycholinguistics: A Review, Psychological Bulletin 43:3 (1946), esp. pp. 226–32, for a consideration of this topic. The referral of behavior patterns in the individual to a synaptic source represents a hypothesis which is accepted by some psychologists.

[4] The freedom suggested here may also extend to the justification of the most extensive apriorism

1.5 Hockett puts forward the opposition: game: science, based, as I apprehend it, on the following distinction: a science is a science while it investigates real phenomena according to techniques designed to describe a relatively large number of the observable features which are associated with these phenomena; it is a game when postulated phenomena are manipulated according to features which are quasi-freely selected. A control on the scientist is "observable features"; the gamester is controlled by selection.[5] Following this, and granted that the units and relationships handled by mathematicians are not observable but at best succedanea for observables, it would seem quite legitimate to suggest, as Hockett does, that mathematicians play games (and are not scientists).

1.6 Linguistic formulations may contain a function of analogy = a function of predictability.[6] Distributional similarities representing morpheme class criteria (& ∴ the symbolized morpheme classes) may be stated as indices of prediction (predictors) for all the morphemes of the corpus which are affected by them. Thus the statement: A (= morpheme class A) may be said to predict for a group of morphemes certain common features of distribution when these features are illustrated in substatements only by certain members of the group. So in a grammar statement of the language corpus, morphemes may be listed in full while distribu-

in arriving at a classificatory framework for data. Thus it is theoretically possible to propose that the entire structure of a language corpus as analyzed by a single investigator may (with alternatives) be stated as A. Here A is taken as a unit symbolizing a statable (n.) number of morpheme classes ± subclasses based on statable contrast criteria, and representing a statable number of interrelationships among the classes and their constituent morphemes. Expansions of A may then be developed, until the original statement is replaced (or clarified) by an extensive series of substatements. [Z. S. Harris, by a system of syntactic equations, arrives at resultant symbols which may be said to represent linguistic structure in a similarly compressed fashion. The essential difference between Harris's resultants and the symbols expressed here lies in the apriorism of the latter. Harris's symbols result directly from a procedure of selective substitution practised upon the sequences of a language corpus. The present symbols are stated before analysis and are defined relative to n. units and n. relationships. Substitutability is defined as an automatic function of morpheme class criteria. See Z. S. Harris, Review of Emeneau's Kota Texts I, Lg. 21.283–9 (1945), and W. D. Preston, Some Methodological Suggestions Based on Aleut Linguistic Material, IJAL 13.171–4 (1947).] At the same time, the formal data of the language under analysis need never figure in the statements of structure, i.e. units and relationships based on a given language corpus may be divorced from that corpus when statements are made. Linguistic structure thus becomes sequences of abstract symbols which may be compressed in stages, down to a single symbol. It would appear that this variety of operation is not linguistic in the sociological sense of language. Instead it would seem to represent an uncomplicated form of applied mathematics. It may also be suggested that the social usefulness of linguistic studies increases in direct ratio as the reference to the data of language becomes more specific. It is not likely that any sort of statement involving symbols exclusively, with no accompanying language sequences, would be useful to the seeker of knowledge about languages. But it remains feasible to state a principle of dissociation by which to split symbolic structure away from accompanying sequences, even when these sequences are scrupulously included to illustrate every collocation of symbols.

[5] The scope of this selection feature may include freedom to delimit research projects according to type and quantity of data, and according to extent and limitations of techniques. This freedom may be said to redefine progressively the nature and inclusiveness of a field of study. The linguist (gamester) may wish to insist that ethnolinguistic and psycholinguistic techniques be made available to him, and that he have a hand in deciding what happens in a speaker's mind~body when he speaks.

[6] Hockett says, "The player of linguistics as a game has no criterion by which to judge the relative merits of one analysis versus another. . . . The worker in linguistics as a science. . .has such a criterion: accuracy of prediction beyond one's corpus, and communicability of the basis for such prediction to others."

tions are represented by types.[7] At this point a further extension of the predictability function to include sequences not in the corpus remains optional. If the extension is made it may be regarded as: 1. a product of the science of prediction; 2. a sine qua non of the reality and analogy of phenomena; 3. a reflex of the desire to teach (social service).[8] In the case of 1. there is no necessary implication that phenomena exist or are real, or that predictions need be accurate or inaccurate. For 2. a reality and analogy is preassumed. In order to explain 3. various assumptions may need to be made. For science as statementology, 1. would perhaps best define a function of predictability (for both predictions and extensions).

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LEARNING NAVAHO. By Berard Haile. St. Michaels Press, Saint Michaels, Arizona. Volume three, pp. 166 (1947), volume four, pp. 296 (1948).

In IJAL 11.64–5 (1945), we reviewed the first two volumes of Father Haile's book "as the embodiment of a set of sound and up-to-date principles of language teaching;" the volumes at hand follow the same method of instructing colloquial Navaho by way of conversations and drills, with notes and vocabularies added by the author.

In vol. 1, where the behavior of nouns was examined, the phonetics had also been largely covered. Vol. 2 treated the topic of locomotion. Vol. 3 "is chiefly concerned with handling various objects which may be round, long, flexible, animate, a quantity easily held in hand, or a mass and granular quantity, liquids in a container and like concepts. . . ." This material is presented in a dozen lessons, each built around a subject like livestock, herding, mutton and beef, preparation of foods, eating, a cup of coffee, a drink, doing the dishes, and the care of eyes. We were especially taken by the Navaho sentence (p. 98) ša?díził sicilí *pour out a little for me brother*, said upon noticing that one's friend has a pint in his hip pocket or indicates by his actions that a supply of the liquid is hidden in the wagon or car. The Army manuals were never as practical as this!

In Vol. 4, Father Haile introduces the special terminologies of sheep herding, agriculture, weaving, silversmithing, purchase and selling. Subjects from the areas of acculturation are also included in part, but references to ceremonial terminology, hunting, or gambling are very rare. Personal statements and narrative style were felt by the author to belong sufficiently to every day language so that he included samples of these as well. Another dozen lessons develop such subjects as sickness and seeing the doctor, a narrative story based on an actual occurrence, terms relating to land, and argument over months and the calendar in general, communications, court, schools, and a wealth of other relevant and practical topics.

The morphology is cleverly woven into the lessons bit by bit. The Navaho entries in the last volume alone amount to over 830 items.

In his recent book, Dean Pittman[1] juxtaposed the words "practical" and "linguistics" in an endeavor to show one way in which linguistics can be useful. The book under review is perhaps the finest example of the application of linguistics to the practical presentation of a preliterate language.

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PRACTICAL LINGUISTICS. By Dean Pittman. Mid-Missions, Cleveland, Ohio, 1948. 219 pp. $3.50.

[7] See fn. 4 on the splitting away of units and relationships (numbers and functions of numbers) from illustrative language sequences.

[8] Cf. W. D. Preston, Review of Schultz-Lorentzen, IJAL 14. 271–4 (1948).

[1] *Practical Linguistics*. Mid-Missions, Cleveland, Ohio, 1948.

Here is a field manual in linguistics to serve the large number of missionaries who are working with unwritten languages. If wideness of range were the proper measure for completeness, this book might be said to have fulfilled its purpose. Beginning with a short orientation into the history and study of linguistics, the subjects of phonetics, phonemics, grammar, semantics, grammatical analysis, field techniques, translation, and teaching the native to read are all discussed, followed by a sample grammar and an appendix containing biblical information—such as weights and measures—Greek verb forms, source material, and other general information. The material is designed to carry a missionary through, linguistically, from his first greeting to an informant until the time he gets his translation of the New Testament back from the publishers and teaches his natives to read it. Being a missionary himself, Pittman is well acquainted with the many steps that come in between.

Pedagogically, the book is well presented. Generous diagrams illustrate the beginning phonetic explanations. The style is informal; an air of optimism pervades the whole book, with encouraging statements such as the following! "In some cases, missionaries have returned from their tribes saying 'No one can learn that language', and after studying linguistics for a short while have gone back to conquer the language in a few short months."

Phonetics is treated perhaps most completely; there is a very close resemblance of Pittman's phonetic descriptions to those presented by Pike (Phonetics: A Technique for Reducing Languages to Writing). Pittman, however, does not follow Pike in his use of the terms vocoid and non-vocoid. While his phonetic descriptions of individual phones are quite adequate, he falls into a vague mode of description when he comes to classificatory or general terms. Vowels are defined as: "those sounds which usually are syllabic in languages". It is then pointed out that z and f are syllabic in the Zapoteco word ȼz *ten* and the Shilh word tfkt *you give*. Evidently, however, z and f are not vowels according to his definition because they are not *usually* syllabic in languages (a mere question of statistics, and no phonetic definition at all).

The sections on grammar and grammatical analysis deal with morphology and syntax. Morphemes are described in terms of taxemes (1. order, 2. phonemic structure, under which heading morphophonemic changes of many types are discussed, though the use of morphophonemic symbols is not suggested, and 3. selection) and grammatical processes. Controversial issues and newer developments in the field, such as morpheme alternants, are on the whole avoided.

Despite a few weak points and some omissions (sparse treatment of tone), Pittman displays an excellent acquaintance with the many linguistic problems a missionary faces, including such practical matters as the transcription of music and methods for a monolingual approach, and has produced a book that is easy to read and makes good sense. He deserves credit for being able to put so much valuable linguistic information into so few pages.

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LINGUISTICS AND ETHNOLOGY. By Joseph H. Greenberg. Southwestern Journal of Anthropology 4.140–7 (1948).

DÉSINENCES CASUELLES ET PERSONELLES EN ESKIMO. By Michella Erichsen. Acta Linguistica 4.67–88 (1944).

A STRUCTURAL TREND IN NOOTKA. By Morris Swadesh. Word 4.106–19 (1948).

KUTENAI LEXICAL INNOVATIONS. By Paul L. Garvin. Word 4.120–6 (1948).

GREETING FORMS OF THE GULF AZTECS. By Howard W. Law. Southwestern Journal of Anthropology 4.43–8 (1948).

L'ESPAGNOL DANS LE NOUVEAU MONDE—PROBLÈME DE LINGUISTIQUE GÉNÉRALE.

By Bertil Malmberg. Studia Linguistica 2.1–36 (1948).

Greenberg's paper is, in part, a synthesis of several recent points of view, and, in part, a programmatic statement. Linguistics, he points out, belongs both to the science of culture and to the science of signs, and shows—in general terms rather than by reference to specific languages—that the verbal and non-verbal aspects of culture are closely intertwined.

Erichsen's study deals, in the light of general linguistics, with two interrelated sets of problems, one referring to the case system, the other to the verbal system of Eskimo. She first examines the modern Greenlandic relative morpheme -p (which corresponds in Aleut, Old Greenlandic, and other Eskimo dialects to -m), and tries to gauge its meaning. This turns out to be instrumental. The possessive suffixes constitute the relative of the personal pronouns, thus being parallel in meaning to the substantive in the relative case. The Eskimo verb has the form of a substantive (or, rather, of a series of substantives derived from a common root). To these bases are added the personal suffixes, of which there are two sets recurring in the various moods. The 3rd person is not expressed, and neither are the independent and dependent persons.

Swadesh adduces evidence indicating that the suffixing system of Nootka is a relatively recent development: particles formerly postposed are now suffixes. In the neighborhood of Nootka, on the northwest coast, three other languages share this "all-suffixing synthetic structure": Kwakiutl (which, together with Nootka, belongs to the Wakashan stock), Quileute and Chemakum (which belong to the Chemakuan stock). Eskimo-Aleut structure is similar too. Wakashan and Chemakuan have even lexical similarities: a common origin for the two stocks is likelier than mutual borrowing, though Salish, for example, may have some degree of relationship with both. The author suggests that the trend towards the all-suffixing type antedates the appearance of the Tlingits and Haidas in the northwest, and may have begun when the Wakash-Chemakuans were contiguous with the Eskimo-Aleuts. Quite recently, the influence of English seems to have checked the creation of new suffixes in Nootka, though the structure has not been vitally affected.

In his compact survey of Kutenai lexical innovations Garvin deals with loans, loan translations, new usages, new formations, and descriptive phrases devised for recently adopted culture elements. The first two are rare. New formations are the most common, and are all sequences containing verb themes; the participial and locative types are discussed and tabulated.

The Aztec dialect from which Law had gathered his greeting forms is spoken in Mecayapan, Veracruz, Mexico. His paper gives greeting dialogues, describes the shorter greeting-response complexes, and states the non-linguistic situations which accompany greetings. The greeting dialogues take place between a man or woman and his or her compadre or comadre, and are in frequent use. The dialogues consist of some fifteen native morphemes plus Spanish loans. The shorter greetings and responses are all based on the single verb stem pia *to have*, and are here classified according to their morphological structure.

The first part of Malmberg's paper was summarized in IJAL 14.278–9 (1948). In the concluding part, he focuses on Peru, Chile, Paraguay and the region of the Río de la Plata. The language of Peru is rather conservative and has best preserved Castilian proper; the standard dialect remains unaffected by Indian languages—Quechua and Aymara—which, however, still have an influence in the country dialects and in bilingual milieux. The author also refers to the littoral Chimu, or Mochica, and makes remarks about the phonemics of Quechua and Aymara. The language of Chile derives from the vulgar Spanish dia-

lect of colonial immigrants. Araucanian phonemes are here discussed. In Paraguay, the influence of the native languages was far more profound than elsewhere. The phonemes of Guarani are summarized here. Argentina dominates the environs of the Río de la Plata, though this was not always so. The language of the region in general, but of Buenos Aires in particular, is characterized by the intrusion of low class and regional elements into the standard, even the literary dialect. The influence of the numerous immigrant groups (e.g., the Italian) is much disputed. The Indian influence is quite negligible in this region, because the population of the Pampas with whom the white came in contact took no part in the building of the great cities. Malmberg then briefly mentions the influence of Spanish on Guarani, Araucanian, and Nahuatl. He finally draws conclusions of relevance to general linguistics. His footnotes throughout contain valuable bibliographic references.

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